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Environmental Protection Agency

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ENVIRONMENTAL PROTECTION AGENCY

Justifications of Appropriation Estimates for Committee on Appropriations, Fiscal Year 1976

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Environmental Protection Agency

1976 Budget Estimates

Table of Contents

Page

Summary Tables I

- Air .... A- 1
  - Abatement and Control .... A- 8
    - Mobile source A-10
    - Stationary source standards and guidelines A-15
    - Ambient trend monitoring A-18
    - Technical assistance A-21
    - Academic training A-24
    - Control agency support A-25
  - Enforcement A-27
    - Stationary source enforcement A-29
    - Mobile source enforcement A-38
  - Research and Development A-45
    - Processes and effects A-46
    - Control technology A-51

- Water Quality .... WQ- 1
  - Abatement and Control .... WQ- 9
    - Ambient trend monitoring WQ-14
    - Technical assistance WQ-17
    - Academic training WQ-25
    - Control agency support WQ-27
    - Municipal source control WQ-29
    - Industrial source control WQ-35
    - Nonpoint source control WQ-38
    - Ocean disposal and spill prevention WQ-41
    - Areawide waste treatment management grants WQ-46
  - Enforcement WQ-48
    - Water quality enforcement WQ-48
  - Research and Development WQ-53
    - Processes and effects WQ-54
    - Control technology WQ-59
  - Construction Grants WQ-63

Page

Water Supply.................................. WS- 1
  Abatement and Control.............................. WS- 6
    Technical assistance.............................. WS- 8
    State program grants.............................. WS-12
  Enforcement.................................. WS-13
    Water supply enforcement.............................. WS-13
  Research and Development.............................. WS-15
    Processes and effects.............................. WS-16
    Control technology.............................. WS-19

Solid Waste.................................. SW- 1
  Abatement and Control.............................. SW- 5
    Technical assistance.............................. SW- 6
  Research and Development.............................. SW-11
    Processes and effects.............................. SW-12
    Control technology.............................. SW-14

Pesticides.................................. P- 1
  Abatement and Control.............................. P- 6
    Registration and tolerances.............................. P- 9
    Monitoring.............................. P-11
    Technical assistance.............................. P-13
  Enforcement.................................. P-16
    Pesticides enforcement.............................. P-16
  Research and Development.............................. P-19
    Processes and effects.............................. P-20

Radiation.................................. R- 1
  Abatement and Control.............................. R- 7
    Standards and guidelines.............................. R- 8
    Monitoring.............................. R- 9
    Technical assistance.............................. R-11
  Research and Development.............................. R-13
    Processes and effects.............................. R-14

Noise.................................. N- 1
  Abatement and Control.............................. N- 8
    Standards and guidelines.............................. N-10
    Technical assistance.............................. N-12
  Enforcement.................................. N-15
    Noise enforcement.............................. N-15
  Research and Development.............................. N-19
    Processes and effects.............................. N-20
    Control technology.............................. N-21

Page

Interdisciplinary.................................. I- 1
  Research and Development.......................... I- 2
    Processes and effects........................... I- 3
    Control technology.............................. I- 8

Toxic Substances................................... TS- 1
  Abatement and Control............................. TS- 5
    Standards and guidelines........................ TS- 5
  Research and Development.......................... TS- 8
    Processes and effects........................... TS- 9

Program Management and Support..................... PMS- 1
  Abatement and Control............................. PMS- 6
    Program management.............................. PMS- 7
    Program support................................. PMS- 9
  Enforcement....................................... PMS-10
    Program management.............................. PMS-11
    Program support................................. PMS-14
  Research and Development.......................... PMS-15
    Program management.............................. PMS-16
    Program support................................. PMS-18

Energy... E- 1
  Research and Development.......................... E- 1
    Processes and effects........................... E- 2
    Control technology.............................. E-12

Agency and Regional Management..................... ARM- 1

Buildings and Facilities........................... BF- 1

Scientific Activities Overseas..................... SAO- 1

Special Analyses................................... *

* See Special Analyses Table of Contents

ENVIRONMENTAL PROTECTION AGENCY

Budget Summary

The Environmental Protection Agency's 1976 budget proposal provides for an increase of $47 million and is presented under eight appropriations. A summary of each area and the major changes for 1976 follows.

1. Research and Development programs produce the scientific information and technical tools on which to base national policy and effective control strategies in the regulation, prevention and abatement of environmental pollution.

The major 1976 increases are budgeted to support the water quality and water supply program areas. Work on nonpoint source pollution management will be accelerated with an increase of $2.5 million; research on the health effects of land disposal of sludges produced by wastewater treatment plants will be increased by $1 million; and an additional $7.6 million will be used to carry out research in support of the recently enacted Safe Drinking Water Act.

Agency support for the National Center for Toxicological Research will increase by $2 million, to create an inhalation toxicology facility.

Reductions will be effected in the air research program ($8 million reflecting the impact of large scale investments made during 1975), radiation research ($1 million), noise research ($0.5 million), and program management ($2 million).

2. Energy Research and Development programs provide for development of a scientific basis to ensure (1) protection of human health, (2) environmental protection necessary to facilitate the use of domestic energy supplies, (3) implementation of energy systems initiatives without delays caused by inadequate and insufficient environmental impact data, and (4) the concurrent development of appropriate control technologies and emerging energy systems to minimize control costs and environmental impact. The energy related research program will be reduced by $22 million. This reduction reflects the impacts of transfers to the Energy Research and Development Administration, multiyear funding of large scale projects in 1975, and the completion of certain capital intensive large-scale demonstration project.

3. Abatement and Control programs provide for development and implementation of environmental standards, monitoring and surveillance of pollution, pollution control planning, financial and technical assistance to State and local pollution control agencies, assistance to other Federal agencies to minimize adverse impact of their activities on the environment, and training of personnel engaged in pollution control activities.

A decrease of $5.5 million is budgeted for the air program which reflects a reduction in vehicle in-use testing, academic training and the carry over to 1976 of a $3.75 million congressional add-ons which was not utilized in 1975. A major increase of abatement and control is $53.0 million for the Section 208 areawide waste treatment management planning grant program due to the shift in funding from contract authority to budget authority. Other water quality activities show decreases, principally in the area of control agency grants ($11.3 million), clean lakes ($4 million), industrial source control ($2 million), ambient trend monitoring ($1 million), academic training ($0.9 million), and water planning ($1 million). There is a small increase provided for increased staff to manage the construction grant program.

An incrase of $16.8 million is budgeted for the water supply program to support State water supply programs and State underground injections control programs and carry out other activities mandated by the Safe Drinking Water Act.

Water Supply

An increase of $10.0 million is budgeted to carry out the mandates of the Federal Insecticide Fungicide and Rodenticide Act, as amended. These funds will support increased efforts in applicator training ($7.2 million), assistance to State applicator certification programs ($1.8 million), increased regional technical assistance activities ($.5 million) and increased funding for pesticide registration and classification ($.5 million).

Other changes in abatement and control are a $1.2 million increase for the solid waste program; a $4.7 million increase for the noise control program; and a $0.2 million decrease for the radiation program.

4. Enforcement program responsibilities are in the areas of air pollution control, water pollution control, and pesticide control. Much of the effort is in support of or in cooperation with State and local enforcement programs such as the enforcement of air quality standards; navigable and interstate water quality standards and issuance of discharge permits. The increase of $1.5 million in 1976 reflects the combination of a $2.7 million

decrease in water enforcement and increases of $1.3 million in air enforcement, $.5 million in noise enforcement, $.2 million in pesticides and $2.2 million in enforcement program management and support. Enforcement includes such actions as notices of violations, abatement orders, civil and criminal court actions, and, in the case of pesticides, recalls and seizures.

5. Agency and Regional Management activities provide both centralized and regional leadership and administrative support for EPA's programs. An increase of $6.9 is budgeted for management and support activities. This provides for preparation of EIS's and audits of wastewater treatment grants as well as the increases necessary to maintain the Agency support services at approximately the same level as 1975.

6. Construction Grants are made to local public agencies for construction of municipal wastewater treatment facilities to assist States and localities in attaining and maintaining water quality standards. The Federal Water Pollution Control Act Amendments of 1972 authorized $18 billion for this purpose. As a result of the recent Supreme Court decision, this entire amount is available for obligation. As of February 1975, approximately $4 billion of these funds had been obligated.

7. Scientific Activities Overseas (Special Foreign Currency Program) supports cooperative research and demonstration programs in other countries, using excess currencies available under PL 480. No funds were appropriated in 1975. The 1976 request of $6 million will restore the program to its previous operating level and allow participation in a special cooperative energy related environmental studies program with Poland.

8. Buildings and Facilities activities provide for the design and construction of EPA owned facilities as well as for the repair and improvement to facilities utilized by the Agency. The $.7 million increase will be used to meet the Department of Labor's safety standards under the Occupational Health and Safety Act.

Summary of Budget Authority and End-of-Year Employment

	1974	1975	1976
Research and Development			
Budget Authority...	$159,427,742	$169,229,500	$162,631,600
End-of-Year Employment........	1,786	1,834	1,779
Abatement and Control			
Budget Authority...	256,014,845	279,225,700	339,547,900
Contract Authority.	100,000,000[a]	150,000,000[b]	...
End-of-Year Employment........	3,770	3,798	3,998
Enforcement			
Budget Authority...	45,812,522	51,670,300	53,162,000
End-of-Year Employment........	1,578	1,597	1,525
Agency and Regional Management			
Budget Authority..	55,693,902	60,469,500	67,358,500
End-of-Year Employment.......	1,824	1,823	1,837
Energy Research and Development			
Budget Authority..	...	134,000,000	112,000,000
End-of-Year Employment.......	...	...	40
Buildings and Facilities			
Budget Authority..	...	1,400,000	2,100,000
End-of-Year Employment.......	...	...	...
Construction Grants			
Budget Authority..	...	...	...
Contract Authority	4,000,000,000	9,000,000,000[c]	...
End-of-Year Employment.......	...	...	...
Scientific Activities Overseas			
Budget Authority..	2,000,000	...	6,000,000
End-of-Year Employment.......	...	...	...

	1974	1975	1976
Operations, Research and Facilities			
Budget Authority...	...	...	...
End-of-Year Employment........	83	...	...
Revolving Fund			
Budget Authority...	...	...	...
End-of-Year Employment........	...	...	...
Trust Fund			
Budget Authority...	-4,871	...	...
End-of-Year Employment........	...	...	...
Reimbursements[d/]			
Budget Authority...	...	...	...
End-of-Year Employment........	146	135	105
Advances and Allocations Accounts			
Budget Authority...	...	...	...
End-of-Year Employment........	16	16	16
Total, Environmental Protection Agency			
Budget Authority...	518,944,140	695,995,000	742,800,000
Contract Authority.	4,100,000,000	9,150,000,000	...
End-of-Year Employment........	9,203	9,203	9,300

a/ Section 208 Areawide Waste Treatment Management Grants. $100 million contract authority authorized for 1974, of which $86,795,000 was administratively cancelled.

b/ Section 208 Areawide Waste Treatment Management Grants. $150 million contract authority authorized for 1975, of which $120 million is expected to be obligated.

c/ Includes $1,333,770,000 allotted earlier by Court Orders but not made available for obligation until Supreme Court decision of February 18, 1975.

d/ Included in the President's Budget under Research and Development, Abatement and Control, and Agency and Regional Management.

NOTE: End-of-year employment = permanent positions.

Summary of Increase or Decrease
Budget Authority and End-of-Year Employment

	1975	1976	Increase or Decrease
Research and Development			
Budget Authority.....	$169,229,500	$162,631,600	-$6,597,900
End-of-Year Employment..........	1,834	1,779	-55
Abatement and Control			
Budget Authority.....	279,225,700	339,547,900	+60,322,200
Contract Authority...	150,000,000	...	-150,000,000
End-of-Year Employment..........	3,798	3,998	+200
Enforcement			
Budget Authority.....	51,670,300	53,162,000	+1,491,700
End-of-Year Employment..........	1,597	1,525	-72
Agency and Regional Management			
Budget Authority.....	60,469,500	67,358,500	+6,889,000
End-of-Year Employment..........	1,823	1,837	+14
Energy Research and Development			
Budget Authority.....	134,000,000	112,000,000	-22,000,000
End-of-Year Employment..........	...	40	+40
Buildings and Facilities			
Budget Authority.....	1,400,000	2,100,000	+700,000
End-of-Year Employment..........	...	...	...
Contruction Grants			
Contract Authority...	9,000,000,000	...	-9,000,000,000
End-of-Year Employment..........	...	...	...
Scientific Activities Overseas			
Budget Authority.....	...	6,000,000	+6,000,000
End-of-Year Employment..........	...	...	...

	1975	1976	Increase or Decrease
Reimbursements a/			
Budget Authority.....	...	...	...
End-of-Year Employment..........	135	105	-30
Advances and Allocations			
Budget Authority.....	...	...	...
End-of-Year Employment..........	16	16	...
Total			
Budget Authority....	695,995,000	742,800,000	+ 46,805,000
Contract Authority..	9,150,000,000	...	-9,150,000,000
End-of-Year Employment.........	9,203	9,300	+97

a/ Included in the President's Budget under Research and Development, Abatement and Control, and Agency and Regional Management.

NOTE: End-of-year employment = permanent positions.

1<

Air

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control.....	$87,317,300	$77,235,100	-$10,082,200
Enforcement...	10,749,900	12,020,000	+ 1,270,100
Research and Development.	55,958,800	47,973,600	- 7,985,200
Total.....	154,026,000	137,228,700	- 16,797,300
End-of-Year Employment			
Abatement and Control.....	730	773	+43
Enforcement...	404	444	+40
Research and Development.	456	454	-2
Total.....	1,590	1,671	+81

Overview and Strategy

The Clean Air Act authorizes a national program of air pollution research, regulation, and enforcement activities. Primary responsibility for the prevention and control of air pollution rests with State and local governments. The program is directed at the Federal level by the Environmental Protection Agency (EPA). EPA's role is to conduct research and development programs, set national environmental goals, ensure that adequate standards and regulations are established to meet these goals, provide technical and financial assistance to the States, and ensure that the standards and regulations are effectively enforced.

The environmental goals are quantified in the National Ambient Air Quality Standards (NAAQS), which set forth the allowable concentration in air of pollutants which affect human health and public welfare. The health and other effects of pollutants are delineated in criteria documents which are the basis for the standards. National Ambient Air Quality Standards have been set for total suspended

2<

particulates, sulfur dioxide, nitrogen dioxide, carbon monoxide, photochemical oxidants, and hydrocarbons. The first three pollutants are emitted primarily from stationary sources, while the remainder are attributed primarily to motor vehicles. Two types of standards are set: primary standards to protect human health and secondary standards to protect the public welfare (prevention of damage to property, animals, vegetation, crops, visibility, etc.).

As an aid in managing the air pollution control program, the Nation has been divided into 247 Air Quality Control Regions (AQCRs). These regions are classified into priorities according to the seriousness of the air pollution problem.

The severity of the air pollution problem that the Nation faces can best be described by examining the classification of the Air Quality Control Regions. Of the 247 Regions, 120 were classified in 1972 as Priority I where the concentration of particulates was significantly above the level necessary to protect human health. Over 65 percent of the population resides in these areas. Sixty AQCRs with 50 percent of the population were classified as Priority I for sulfur dioxide. About 53 percent of the population resides in the 53 Regions where the concentration of photochemical oxidants is significantly above protective health standards. Of course, not all of the population in these Regions is exposed to levels of pollution above the primary standard.

Significant gains have been made in reducing air pollution. The average center - city concentration of sulfur oxides has markedly decreased and some progress has been made in reducing urban particulate levels. These gains result, primarily, from the increased use of cleaner burning fuels. Further improvements in air quality can be expected as the effects of stationary source control devices, currently being installed to conform with State Implementation Plans, are felt. In addition, there has been a significant downward trend in motor vehicle emissions since the advent of Federal emission standards. For example, model year 1971 vehicles emitted 65 percent less hydrocarbons and 54 percent less carbon monoxide than earlier, uncontrolled (1952-1967) vehicles.

Although there has been an improvement in air quality in many areas, pollutant levels in many AQCRs are still above the primary standards. For example, in Denver, the annual mean of measured particulates in 1972 was twice the level necessary to protect human health; in Chicago 1.3 times the level; in Pittsburgh 1.8 times; in New York City 1.3 times; in St. Louis 1.2 times; and in Philadelphia the particulate concentration was right at the level necessary to protect human health. The vehicle emission reduction necessary to protect public health is significant in many areas. For example, in Washington, D.C., meeting the standard necessary to protect human health will require a reduction of 67 percent in the amount of hydrocarbons and a reduction of 56 percent in the amount of carbon monoxide (from 1972 levels).

The basic goal of the Clean Air Act is to meet primary standards necessary to protect human health by July 1975, or in cases where the necessary control technology is not available, by 1978. The strategy for achieving and maintaining ambient standards has been directed mainly at reducing emissions from sources. States were required to prepare State Implementation Plans which set emission limitations for existing stationary sources and specify steps to be taken to control pollution from motor vehicles. State and community air pollution control agencies establish schedules for many existing sources that delineate dates by which control equipment must be procured, installed and in operation. Enforcement actionsare taken by the States and communities against sources which do not comply with the State Implementation Plans. In cases where the States fail to meet the requirements of the Clean Air Act, EPA promulgates requirements for installing control equipment or takes enforcement action against noncomplying sources. However, in keeping with the policy of the Act, which places the primary responsibility for air pollution control on States and communities, EPA takes action only in the absence of State or local action. EPA gears its activities toward complementing the efforts of State and local agencies and toward facilitating these agencies' operations, including providing financial support.

In addition, during 1976 two relatively new areas of program concern are to be given increasing priority: one is the maintenace of standards once achieved and the prevention of significant deterioration of air quality; the second is the utilization of flexibility within the Act to assure that environmental goals and goals of energy sufficiency do not unnecessarily conflict.

The Clean Air Act also requires EPA to establish Federal

4<

emission limitations for new stationary sources and for sources emitting "hazardous" pollutants such as asbestos, beryllium, and mercury. EPA encourages States to accept responsibility for enforcing these programs; where States do not accept delegation, EPA is responsible for enforcement.

The Clean Air Act also requires EPA to set national emission standards for new motor vehicles and aircraft. Mobile sources are significant contributors to urban air pollution. Almost all of the carbon monoxide, more than half of the hydrocarbons (and its by-product, photochemical oxidants), and slightly less than half of the nitrogen oxides in our cities come from mobile sources. The burden for compliance with auto emission standards is with the manufacturer. EPA assures compliance primarily by certifying prototype vehicles. In 1976, a new thrust will be to assure that production vehicles comply with emission standards. EPA also has the responsibility to ensure that in-use vehicles meet standards through implementation of the recall, warranty, tampering, and import provisions of the Clean Air Act. In addition, EPA enforces standards to assure the availability of lead-free fuel. To insure that emission control devices are kept in proper working order, States and communities are establishing inspection and maintenance programs.

The Clean Air Act also authorizes research and development work to better define health and welfare effects of pollutants, to define mechanisms of atmospheric transportation and transformation of pollutants, and to develop improved control methods. The research and development program is structured to supply the information base and the technology necessary to support the Agency's standard setting and enforcement activities. Comprehensive knowledge of pollutants, their type, source, occurrence, effects, and atmospheric pathways is necessary if air pollution is to be controlled. The research and development program, therefore, attempts to anticipate the technical needs of the enforcement program, to supply technical assistance for immediate rulemaking activities, and to develop data with which to continually evaluate established standards.

5<

Summary of Increases and Decreases

1975 Air Program.....................	$154,026,000
Abatement and Control...............	-10,082,200
Reduce in-use vehicle testing program, reduce New Obligational Authority for control agency support (program level remains the same), and phase down academic training program.	
Enforcement..........................	+1,270,100
Increase enforcement of mobile source control program.	
Research and Development............	-7,985,200
Transfer of support to Agency's energy related environmental program.	
1976 Air Program Request............	137,228,700

Air
Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control			
Mobile Source...........	$10,290.1	$8,935.4	-$1,354.7
Stationary Source Standards and Guidelines....	6,402.5	6,441.3	+38.8
Ambient Trend Monitoring	3,262.1	2,533.0	-729.1
Technical Assistance....	10,369.6	10,457.4	+87.8
Academic Training.......	1,700.0	1,100.0	-600.0
Control Agency Grants...	55,293.0	47,768.0	-7,525.0
Subtotal..............	87,317.3	77,235.1	-10,082.2
Enforcement			
Stationary Source Enforcement..............	8,544.7	8,891.5	+346.8
Mobile Source Enforceforcement..............	2,205.2	3,128.5	+923.3
Subtotal..............	10,749.9	12,020.0	+1,270.1
Research and Development			
Processes and Effects...	38,426.3	38,437.0	+10.7
Control technology......	17,532.5	9,536.6	-7,995.9
Subtotal..............	55,958.8	47,973.6	-7,985.2
Total........	154,026.0	137,228.7	-16,797.3

7<

	1975	1976	Increase or Decrease
End-of-Year Employment			
Abatement and Control			
Mobile Source	170	223	+53
Stationary Source Standards and Guidelines	146	146	...
Ambient Trend Monitoring	80	80	...
Technical Assistance	334	324	-10
Academic Training	...	...	...
Control Agency Support	...	...	...
Subtotal	730	773	+43
Enforcement			
Stationary Source Enforcement	326	333	+7
Mobile Source Enforcement	78	111	+33
Subtotal	404	444	+40
Research and Development			
Processes and Effects	331	346	+15
Control Technology	125	108	-17
Subtotal	456	454	-2
Total	1,590	1,671	+81

8<

Air

Abatement and Control

	1975	1976	Increase or Decrease
Budget Authority			
Mobile Source.....	$10,290,100	$ 8,935,400	-$1,354,700
Stationary Source Standards and Guidelines......	6,402,500	6,441,300	+ 38,800
Ambient Trend Monitoring......	3,262,100	2,533,000	- 729,100
Technical Assistance......	10,369,600	10,457,400	+ 87,800
Academic Training.	1,700,000	1,100,000	- 600,000
Control Agency Support.........	55,293,000	47,768,000	- 7,525,000
Total.........	87,317,300	77,235,100	-10,082,200
End-of-Year Employment			
Mobile Source.....	170	223	+53
Stationary Source Standards and Guidelines......	146	146	...
Ambient Trend Monitoring.....	80	80	...
Technical Assistance.....	334	324	-10
Academic Training	...	...	...
Control Agency Support.........	...	...	...
Total.........	730	773	+43

Purpose

The air abatement and control program is directed to the establishment of ambient air quality standards, assistance to State and local agencies' efforts to implement these standards with control plans, air quality monitoring and emissions surveillance activities, establishment of

9<

emissions standards for both stationary and mobile sources of air pollution, development of procedures for determining compliance with emissions standards, and determining the need for control of pollutants. EPA also assists Federal agencies in bringing their facilities into conformance with air pollution control requirements. Environmental impact statement review helps insure that the activities of Federal agencies have a minimal air pollution impact.

The bulk of EPA's Abatement and Control efforts support State and community agencies, which bear the primary responsibility for controlling pollution. Over 60 percent of the funds in this area are channelled to State and local agencies through control agency grants; EPA's technical assistance, monitoring and training programs directly support State and local efforts. EPA activities in State Implementation Plan development and revision are also aimed at facilitating State actions. First priority attention is paid to the achievement and maintenance of the primary National Ambient Air Quality Standards in those Air Quality Control Regions that are classified Priority I for sulfur dioxide and total suspended particulates.

Air

Abatement and Control

Mobile Source

	1975	1976	Change
Mobile source....	$10,290,100	$8,935,400	-$1,354,700

The mobile source pollution control program includes (1) development of emission and fuel standards for motor vehicles and aircrafts; (2) provision of technical assistance to the States to plan and implement transportation controls; (3) certification of new vehicles and engines for conformity with applicable emission standards; (4) determination of the emissions performance of in-use vehicles; and (5) certification of emissions testing laboratories.

Emission Standards

The standards set for light duty vehicles (including gasoline and diesel powered automobiles and light duty trucks) and aircraft are undergoing constant evaluation in view of the changing technology available for meeting the standards and changes in our understanding of the degree of control required. Under the Clean Air Act, manufacturers also have an opportunity to request an additional suspension of the statutory standards, commencing in January 1975. Work related to the suspension requests will require a substantial effort during the second half of 1975 and the beginning of 1976.

Standards are being developed for motorcycles and work is in process for setting more stringent emission standards for heavy duty and medium duty trucks. The current emission standards for heavy duty vehicle engines are comparatively less stringent than are the emission standards for light duty vehicles. A meaningful heavy duty vehicle test procedure will be developed, on the basis of which the air quality impact of heavy duty vehicle emissions can be documented, and standards justified. In addition, the need for control is being assessed for sulfates emitted from light duty vehicles and polynuclear aromatics from heavy duty diesel powered trucks. All of this work entails the development of testing procedures and measurement techniques.

11<

In addition, this program consists of the assessment of alternative power systems plants and fuels for automotive transportation systems that may have potential for improved fuel economy and emissions performance, and the fostering of use and application of such systems in the development of long term national environmental pollution control strategies.

State Technical Support

Technical support to the States as they plan and implement transportation controls is carried out through the development of information as to the feasibility and effectiveness of transportation control measures and implementation procedures. The development of a test protocol will enable EPA to provide data to the States on the effectiveness of candidate emission control devices in reducing emissions when retrofitted to in-use vehicles. The vehicle is a State responsibility under the Clean Air Act. The Act does not provide authority for Federal action against individuals whose vehicles may not be properly maintained and used.

Motor Vehicle and Engine Certification

Under this program prototype motor vehicles are tested and certified as to their conformance with Federal emission standards. A program under which auto manufacturers voluntarily label new automobiles with fuel economy data is also operated. Data submitted by manufacturers in support of their applications for certification is reviewed and engine classes are selected for emission testing by manufacturers and by EPA. Vehicle tests are then conducted. The workload that will be required in 1976 is approximately the same as in 1975 and is displayed below.

	1976 Model Year		1977 Model Year		Total FY 1976	
Type of Vehicle	A*	B	A	B	A	B
Light Duty Vehicle	...	1,760	315	1,400	315	3,160
Heavy Duty Engines	106	110	...	...	106	110
Motorcycles.......	...	...	60	100	60	100
Total.......	106	1,870	375	1,500	481	3,370

*Key: A=Number of engine families to be certified.
B=Number of confirmatory tests to be carried out.

The certification of model year 1977 vehicles for high altitude operation will also be required in 1976. EPA plans to handle this task through a contractor.

Emissions Performance of In-Use Vehicles

To determine the contribution of in-use vehicles to air pollution, a representative sample of individually owned vehicles is procured and tested by EPA. This information provides a data base from which motor vehicle pollution can be calculated and projected for individual metropolitan areas as well as nationwide. Approximately 1,000 vehicles are tested each year for this purpose.

The testing of in-use vehicles to determine whether recall is necessary is also carried out under this program. Section 207(c) of the Clean Air Act provides that the Administrator may require a manufacturer to recall and fix, at the manufacturer's expense, any class of properly used and maintained motor vehicles if EPA finds a substantial number are in violation of the emission standards. The testing of 3,000 1972 model year vehicles (the first model year to which Section 207(c) is applicable) has been completed. Manufacturers have been requested to furnish additional information on some 1972 model year vehicle classes that were found to be high emitters. A similar testing program has been initiated, covering 1973 and 1974 model year vehicles; approximately 4,000 vehicles are to be tested. However, a reduction of resources in 1976 for this program will eliminate the testing of 1975 model year vehicles to determine in-use emissions.

Certification of Emissions Testing Laboratories

New regulations, due to be proposed soon, will help reduce the burden on importers in sending vehicles to the U.S. for testing, as well as greatly improve EPA's device evaluation and retrofit certification programs. Under these proposed regulations, private laboratories will be certified by EPA to undertake testing and certify the results. It is estimated that approximately 18 laboratories will seek certification (12 in the United States, four in Europe, and two in Japan).

The issue of importers having to send their cars to Ann Arbor (where EPA's test facilities are located) is increasingly being raised by foreign governments (who have

13<

their own governmental, rather than manufacturer, testing facilities) who desire some sort of reciprocal certification as is used in the aviation field. Because reciprocal certification is unacceptable to EPA, it is essential that EPA proceed to certify labs that can make tests and report the results to EPA.

The verification of retrofit devices and the impact on emission of aftermarket parts constitutes an increasing workload which can be handled more efficiently by independent testing laboratories. If the use of independent laboratories is successful, sizeable savings in EPA resources could ultimately be achieved.

1975 Program and Accomplishments

- Complete certification of manufacturer's planned 1975 model year production of light duty vehicles and heavy duty engines for conformity with emission standards;
- Complete emissions testing to allow determination of whether manufacturers should be required to recall any 1973 model year vehicles;
- Monitor the operation of two in-use vehicle inspection and maintenance State programs and distribute guidance material to States on the establishment of in-use vehicle inspection and maintenance programs;
- Operate the 1975 model year voluntary fuel economy labeling program for automobiles and light trucks.
- Issue a report on the assessment of manufacturers' efforts and ability to meet the statutory light duty vehicle emission standards;
- Propose regulations for the certification of emission testing laboratories, emission standards, and test procedures for medium duty vehicles and emission standards and test procedures for motorcycles;
- Complete a fuel economy study with the Department of Transportation as required by the Energy Supply and Environmental Coordination Act of 1974 ;

- Complete an impact study on the feasibility of electric powered vehicles in urban areas; and
- Complete impact studies on the feasibility of use of various alternative fuels.

1976 Plan

- Complete the certification of manufacturers' planned 1976 model year production of light duty vehicles and heavy duty engines for conformity with emission standards;
- Complete emissions testing to allow determination of whether manufacturers should be required to recall any 1974 model year vehicles;
- Continue to provide assistance to the States to implement inspection and maintenance programs and other transportation control measures;
- Operate the voluntary fuel economy labeling program for 1976 model year automobiles;
- Certify independent testing laboratories in the United States and overseas; and
- Begin certification processing of 1977 model year medium duty vehicles and motorcycles.

Purpose of Decrease

The decrease of $1,354,700 results from the elimination of one in-use vehicle emission testing program for model year 1975 vehicles.

Air

Abatement and Control

Stationary Source Standards and Guidelines

	1975	1976	Change
Stationary source standards and guidelines.......	$6,402,500	$6,441,300	+$38,800

This subactivity covers the development of ambient air quality standards, emission standards for stationary sources, and a variety of analyses related to the implementation of the Clean Air Act.

Although National Ambient Air Quality Standards (NAAQS) have been set for six pollutants (particulates, sulfur dioxide, carbon monoxide, nitrogen oxides, photochemical oxidants, and hydrocarbons), work related to their implementation is continuing. For cases in which the controls required to achieve NAAQS result in significant economic and social dislocation, analysis is required to determine the exact nature of the problem and to develop alternatives for problem resolution within the framework of the Act. Examples of this work are the development of EPA's clean fuels policy and transportation control regulations.

Additional issues arising from EPA's implementation of the NAAQS related parts of the Act (generally brought to light by court actions) require the development of revised policies and regulations; such has been the case with the requirement to assure maintenance of ambient air quality standards (including the control of indirect sources of air pollution), the development of long-range air quality maintenance plans and the prevention of significant deterioration which require State decisions as to land-use control for purposes of air quality preservation.

Issues have also arisen with respect to federally promulgated emission regulations. Although National Emission Standards for Hazardous Air Pollutants (NESHAP) have been promulgated for selected sources of asbestos, beryllium, and mercury, issues still remain unsettled with respect to these standards. The lack of coverage of all sources of these pollutants and the difficulty in setting emission limitations for asbestos sources may require future regulatory action.

New Source Performance Standards (NSPS) have been promulgated for 12 source categories and were proposed for eight additional categories in 1974; it is expected that NSPS will be set for additional sources during 1975-1976. NSPS will continue to be set in the future since they provide the basis for prevention of deterioration of air quality, maintenance of ambient air quality standards, and the control of emerging industries, such as gas turbines, coal gasification, and oil-shale use.

Standards of performance are being developed for sources of fluorides and will be used as the Federal regulatory strategy for this pollutant in the air environment. Control of this pollutant as well as of sulfuric acid mist from sulfuric acid plants will require State control action of existing sources of these pollutants (i.e., the phosphate fertilizer industry and primary aluminum reduction plants) under the provisions of Section 111(d) of the Act. Work is also carried out to determine the need to control additional air pollutants. Under current consideration are, among others, cadmium, particulate polycylic organic matter (PPOM), polychlorinated biphenyls (PBC), lead from stationary sources, and vinyl chloride.

Activities which support the development and implementation of these standards include economic studies of specific industries, comprehensive studies of industries, emissions testing, analyses of source-receptor relationships, analyses of alternative pollutant control strategies, and development of national regulatory strategies. The activities are essential to building an improved data base which is used to develop SIP regulations, improved emissions inventories, analytical tools, and guidance documents for use by State and local control agencies.

1975 Program and Accomplishments

- Promulgate New Source Performance Standards for primary copper, lead and zinc smelters, primary aluminum plants, coal cleaning plants, phosphate fertilizer plants (four processes), electric arc furnaces in the iron and steel industry, and ferroalloy plants;
- Propose New Source Performance Standards for gas turbines;

- Issue State guidelines for standards of performance for existing sources for primary aluminum plants (fluorides), phosphate fertilizer plants (fluorides), and sulfuric acid plants (acid mist);
- Promulgate general regulations to define or establish requirements for source modifications and continuous monitors; and
- Revise and expand coverage of the national emission standards for asbestos (inclusion of two additional manufacturing categories, fabrication processes and waste disposal) and mercury (sewage sludge incinerators).

1976 Plan

- Promulgate New Source Performance Standards for: gas turbines, kraft pulp mills, grain terminals, petroleum refineries (sulfur recovery plants), by-product coke ovens, chlor-alkali plants, lime plants, steam generators (refuse fired), carbon black plants, steam generators (lignite fired), crushed stone plants, electric arc furnaces in grey iron foundries, phosphate rock preparation, sintering plants in steel mills, asphalt roofing, detergent plants, and dry cleaning plants, and
- Promulgate standards for vinyl chloride manufacturing and polyvinyl chloride manufacturing and fabrication.

Purpose of Increase

The increase of $38,800 is to provide for the full year cost of the October 1974 pay raise.

Air

Abatement and Control

Ambient Trend Monitoring

	1975	1976	Change
Ambient trend monitoring..........	$3,262,100	$2,533,000	-$729,100

EPA's ambient air monitoring is carried out by the National Air Surveillance Network and specialized monitoring studies. The bulk of the air quality data, however, is developed by States and localities. Under this program, air quality data submitted by States is analyzed; the EPA air quality monitoring system provides independent verification of State data.

During 1975, efforts are being expanded to meet the needs for air monitoring and analyses related to developing regulations for the State Implementation Plans. Area-specific monitoring will be required to evaluate transportation control plan revisions, to review plans for the maintenance of ambient air quality standards, and to evaluate and promulgate regulations to prevent the significant deterioration of air quality.

Additional monitoring activities will include studies of high oxidant levels in rural areas, smelter and power plant monitoring, assessment of the air quality impact of the use of higher sulfur fuels due to existing low sulfur fuel shortages, and the sampling and analysis of both regulated and nonregulated pollutants (e.g., vinyl chloride) in special or emergency situations. The sharply increasing amount of ambient data becoming available will enable EPA to provide more frequent and sophisticated analyses of national trends in air quality. Analyses of these trends, including the recommendation for control actions, will be carried out in support of the achievement of EPA's objective to achieve primary standards for SO_2 and particulates in Priority I Air Quality Control Regions. Emphasis will also be given to achieving further improvements in storing and disseminating ambient data.

1975 Program and Accomplishments

- Establish improved quality control programs for the State ambient data gathering programs;
- Complete preliminary determinations of the status of compliance of Air Quality Control Regions with National Ambient Air Quality Standards;
- Provide technical guidance and program direction to ensure that all required State monitoring sites are in operation and generating valid data;
- Perform monitoring activities and analyses relative to State Implementation Plan revisions and/or additions; and
- Perform selected special monitoring projects, such as the study of oxidant levels in rural areas and the surveillance of possible problem areas.

1976 Plan

- Initiate a Federal-State program for collection and analysis of ambient data for nonregulated pollutants;
- Install automated air quality data handling systems in 12-15 State and local control agencies;
- Continue monitoring activities and analyses relative to State Implementation Plan requirements;
- Continue providing guidelines and direction to States and local agencies in monitoring operations and data analysis;
- Continue the assessment and development of national trends in air quality;
- Develop a rapid response capability for obtaining air quality information for special studies (examples: lead, sulfates, vinyl chloride, hexachlorobenzene);
- Continue the operation and improvement of national air data banks; and
- Compile a directory of monitoring sites.

Purpose of Decrease

The decrease results from the elimination in 1976 of a "one-time" congressional increase of $750,000 in 1975 offset by an increase to provide for the full-year cost of the October 1974 pay raise.

Air

Abatement and Control

Technical Assistance

	1975	1976	Change
Technical Assistance.......	$10,369,600	$10,457,400	+$87,800

This program includes the provision of technical information and assistance to State and local agencies; the review, approval, or promulgation of State Implementation Plans; the review of environmental impact statements; the surveillance of other Federal agencies' activities to assure compliance with standards; and the conduct of manpower training programs.

Technical Information and Assistance

This program covers primarily the performance of analyses to determine the adequacy of State Implementation Plans (SIPs) and the development, if necessary, of substitute plans for promulgation by EPA. In support of the SIPs, analytical procedures are developed and provided to the States for the preparation of adequate SIPs and revisions. Progress reports, which describe the accomplishments of the States in carrying out their implementation plans, are prepared twice a year. Technical assistance also incorporates activities related to the expansion and improvement of the national data bank of pollutant emissions and air quality information. This information is used to assess national air quality and emission trends, as well as to determine the need for SIP revisions.

Federal Activities

The purpose of this program is to assure that Federal agencies develop plans and programs to meet national air pollution program goals. Executive Order 11752 requires that Federal facilities comply with substantive requirements of SIPs and Executive Order 11514 requires Federal agencies to prepare environmental impact statements on proposed actions. EPA assists Federal agencies in fulfilling their responsibilities under these two Orders. Activities include provision of technical advice and assistance to Federal agencies, monitoring their programs for achieving the standards, reviewing compliance strategies among Federal agencies, and providing assistance in preparing statements on the environmental impact of proposed activities.

Manpower Training

The object of the training program is to help meet manpower needs of State and local programs by providing their personnel with state-of-the-art information on pollution control systems and air pollution control strategy analysis and development. The program includes the development and delivery of short courses for improving the skills of air pollution control personnel at the entry and advanced levels and the assessment of national training needs in air pollution control.

1975 Program and Accomplishments

- Monitor State progress in attaining air quality standards, as stipulated in SIPs, and recommend corrective action;

- Provide two semiannual SIP progress reports;

- Implement new and expanded computer systems for the storage, retrieval and analysis of emissions and related data;

- Publish updated and new emission factors for pollution source categories;

- Upgrade the national technical data base by including emission inventories from all Federal facilities required to report;

- Provide training for approximately 3,500 personnel; and

- Develop and distribute five packaged self-instructional courses.

1976 Plan

- Continue review of progress and development of reports on attaining air quality standards as required by State Implementation Plans;

- Publish updated and new emission factors for pollution source categories;

- Publish documents providing guidance to States in handling and evaluating air quality and emission data;
- Compile and update area source inventories for all States and territories;
- Acquire and store additional source inventory information for hazardous and trace materials;
- Continue to update emission inventories and data from Federal facilities;
- Provide training for approximately 3,500 personnel;
- Develop and distribute five packaged self-instructional courses; and
- Continue to publish technical information abstracts and disseminate information from a central technical information center.

Purpose of Increase

The increase of $87,800 is to provide for the full-year cost of the October 1974 pay raise.

Air

Abatement and Control

Academic Training

	1975	1976	Change
Academic Training...	$1,700,000	$1,100,000	-$600,000

To help meet national needs for professional air pollution control manpower, EPA supports professional training with grants to universities and directly to individuals. This support has stimulated the establishment of competent programs in leading universities over the country. Assistance to individuals with direct fellowship awards will continue in 1976 with emphasis placed on professional development at the graduate level for employees of State and local agencies who are already on the job.

1975 Program and Accomplishments

- Train 70 State and local agency professional employees at the graduate level through fellowship awards direct to the individuals, and
- Support graduate training at 12 institutions for 120 students. Courses of study will be designed to develop pollution abatement practitioners or to provide skills needed for support of pollution abatement programs.

1976 Plan

- Train 70 State and local agency professional employees at the graduate level through fellowship awards direct to the individuals, and
- Support graduate training for 100 students. Courses of study will be designed to develop pollution abatement practitioners or to provide skills needed for support of pollution abatement programs.

Purpose of Decrease

The decrease represents the beginning of the phase-out of the academic training grant program.

Air

Abatement and Control

Control Agency Support

	1975	1976	Change
Control agency support...........	$55,293,000	$47,768,000	-$7,525,000

Assistance is provided to State and local agencies through grants, assignment of personnel to State agencies, special contract support, and demonstration grants. The primary purpose of these support activities is to assist State and local agencies to develop and implement plans to achieve and maintain ambient air quality standards. Grant funds provide for conducting control programs in their entirety and include monitoring, enforcement, administration, laboratory services, and other activities. In general, the control agencies are encouraged to use these funds in a manner consistent with national priorities, such as the achievement of primary National Ambient Air Quality Standards for SO_2 and particulates in Priority I Air Quality Control Regions.

For cases in which States require special assistance for the performance of specialized tasks, such as the development of emission inventories, revisions related to transportation control plans, maintenance of standards, and plans to prevent significant deterioration, the services of EPA contractors are available. EPA enters into contracts with a series of firms for services to be provided upon call. This arrangement greatly speeds up the availability of contractors' services to States and permits States to comply with the short deadlines imposed by the Clean Air Act and related court orders. To bolster State capability, EPA personnel are assigned to State and local agencies under two year term appointments.

1975 Program and Accomplishments

- Support air pollution control programs of approximately 210 agencies in 50 States, the District of Columbia and territories;

- Provide State assignees to State and local control agencies; and

- Provide special assistance (contracts and demonstration grants) to States.

1976 Plan

- Continue support to control agencies to help meet State Implementation Plan requirements and activities;
- Provide State assignees to State and local agencies; and
- Provide special assistance (contracts and demonstration grants) to States.

Purpose of Decrease

The decrease of $7,525,000 reflects the deferral of $3,750,000 to 1976. These funds were added by the Congress in 1975. While the New Obligational Authority shows a large drop from 1975 to 1976, the funds available for obligation will remain the same ($51.5 million).

Air

Enforcement

	1975	1976	Increase or Decrease
Budget Authority			
Stationary Source Enforcement.......	$8,544,700	$8,891,500	+$346,800
Mobile Source Enforcement.......	2,205,200	3,128,500	+923,300
Total........	10,749,700	12,020,000	+1,270,100
End-of-Year Employment			
Stationary Source Enforcement.......	326	333	+7
Mobile Source Enforcement.......	78	111	+33
Total........	404	444	+40

Purpose

The air enforcement program is directed toward acheiving compliance with the standards and regulations established for stationary and mobile sources of air pollution under the provisions of the Clean Air Act. The stationary source enforcement program is undertaken to bolster and stimulate State enforcement of State Implementation Plans, New Source Performance Standards, and National Emission Standards for Hazardous Air Pollutants. The mobile source enforcement program is primarily a Federal effort directed toward achieving compliance with fuel and motor vehicle emission standards and regulations.

The Clean Air Act of 1970 places the primary responsibility for development and enforcement of regulations limiting emission of pollutants upon the States. EPA's primary objective regarding the stationary source enforcement program is to assist and stimulate State enforcement programs. Activities thus far have focused on identifying major sources of pollution, ascertaining compliance status, developing enforceable compliance schedules for sources not in final compliance, and assuring compliance with final emission limitations or increments of progress contained in compliance schedules. In 1976, we will need to give more attention to certain problem urban areas where efforts to meet primary health related standards prove inadequate. Air Quality Maintenance Plans will also require regulating both major and minor sources not previously covered and, in some instances, emission limitations will have to be made more stringent. The promulgation of new NSPS and NESHAP regulations plus an increase of sources affected will call for greater effort in the surveillance and enforcement of these standards.

The Clean Air Act provides a variety of enforcement tools to achieve the necessary reductions in pollutants from automotive vehicles, which as a class constitute the largest single contributor to the Nation's air pollution problems. In the mobile source enforcement program for new motor vehicles, inspection of vehicle manufacturers' production certification procedures and qualifying manufacturer's assembly line test facilities constitute the major thrust of the 1976 program. These efforts will support the prototype certification program funded under the Abatement and Control appropriations. With respect to vehicles in use, the major thrust of the program is to use EPA's authority to order recall of vehicles not conforming to emission standards during their useful life. The production and performance warranty provisions of the Act are also designed to help assure that manufacturers develop and produce vehicles that meet standards throughout their useful life. EPA plans to make these warranties meaningful remedies for purchasers of non-conforming vehicles in 1976. Other activities of the mobile source enforcement program include the enforcement of the tampering provision which makes it a prohibited act for any manufacturer or dealer knowingly to remove or render inoperative a vehicle emission control system after sale of the vehicle; enforcement of Transportation Control Plans for urban areas; and a nationwide fuels surveillance/enforcement program to assure the general availability of unleaded gasoline vital to the maintenance of catalytic converters.

Air

Enforcement

Stationary Source Enforcement

	1975	1976	Change
Stationary source enforcement........	$8,544,700	$8,891,500	+$346,800

The stationary source air enforcement program is designed to effectively utilize the enforcement authorities provided by the Clean Air Act to ensure nationwide compliance with State Implementation Plans (SIP's), New Source Performance Standards (NSPS), and National Emission Standards for Hazardous Air Pollutants (NESHAP). EPA's stationary source enforcement program consists of monitoring and evaluating State enforcement programs; providing technical, legal, and case development assistance to State programs; field surveillance and compliance monitoring of major sources; encouraging States to request enforcement authority for NSPS and NESHAP; and enforcing SIP and NSPS/NESHAP requirements to support and stimulate State efforts.

The responsibility for enforcing State developed, EPA approved, emission limitations is shared by EPA and the States. The Clean Air Act recognizes that States have primary responsibility for achieving clean air within their jurisdiction. When States do not enforce air pollution standards, however, the Act requires EPA to take action. In accordance with the intent of the Act, the EPA air enforcement program is designed to ensure that all sources achieve compliance with applicable standards. EPA bolsters State air enforcement efforts by supporting State control agencies through control agency grants, providing specialized skill and expertise or special contractual efforts, and by taking enforcement actions against selected sources when the States cannot or will not enforce.

EPA has first responsibility for the enforcement of Federal emission standards it promulgates. However, both Section 111 (New Source Performance Standards) and Section 112 (National Emission Standards for Hazardous Air Pollutants) provide for State enforcement of all or a portion of these standards. In accordance with the intent of Congress, and to further the objective of new federalism, high priority has been placed on encouraging states to request delegation of these standards. After delegation, EPA will actively overview the enforcement of these standards.

1975 Program Plans

State Implementation Plans:

Success in enforcing State implementation plans is hinged upon the accomplishment of four major tasks:

- The identification and investigation of possible violators to determine their compliance status;
- Assurance that expeditious compliance schedules are established for violators;
- Assurance that the increments of progress in compliance schedules are met in a timely manner; and
- Assurance that sources initially found in compliance or sources that come into compliance continue to meet emission requirements.

State and Federal programs face an immense task since there are estimated to be over 200,000 stationary sources subject to SIP emission standards. Of this number, between 18 and 20 thousand are "point sources" (facilities individually capable of emitting over 100 tons per year of a single pollutant, as a class responsible for approximately 85 percent of all pollutants from stationary sources). EPA enforcement efforts have been directed almost exclusively therefore, to ensure compliance by this class of emitters.

By the end of 1974, some 16,400 "point" sources had been identified and investigated by States and EPA. Of these, over 10,200 sources were complying with applicable emission standards and about 2,500 were on EPA and State approved compliance schedules. Of the roughly 3,800 remaining 100 ton sources, about 1,500 had State schedules which were being reviewed by EPA for Federal approval; the compliance status of roughly 2,000 more was in the process of being verified, and State or EPA enforcement actions were pending for the remainder.

In 1974, EPA conducted 3,155 investigations (1,987 formal inquiries and 1,168 plant inspections or emission tests) to determine source compliance status and took 275 enforcement actions (228 notices of violation and 47 enforcement orders or civil/criminal actions) to secure source compliance.

In numerous instances, the initiation of an EPA enforcement action has triggered action by the States.

Implicit in EPA's role of ensuring that the Clean Air Act is implemented is the responsibility to ensure that source compliance is maintained once achieved. To ensure that the environmental gains produced by the initial enforcement effort are not lost, efforts by both the States and EPA were initiated in 1975 to annually verify the compliance status of all point sources.

Barring discovery of serious compliance problems in State programs by EPA's compliance monitoring efforts, 85 percent of all point sources will be brought into final compliance by July 1975. Although this will significantly reduce air pollution emissions, it is anticipated that in some 80 or more Air Quality Control Regions, achievement of health related ambient air quality standards for particulate matter and sulfur oxides will be delayed beyond the attainment dates set by the Clean Air Act. The 15 percent of point sources in violation after July 1975 will contain many of the Nation's largest polluters (including power plants, industrial/commercial boilers, and heavy industries such as steel manufacturing). Priority enforcement programs are being conducted during 1975 to ensure that expeditious compliance schedules are established for these categories of point sources. In many of the "problem" AQCRs, however, compliance by major emitters alone will be insufficient to achieve the air quality goals set pursuant to the Act. Numerous violations by smaller sources are thought to be the reason for poor air quality in most of these areas. In 1976, EPA and State resources utilized to obtain compliance by point sources, not needed to ensure their continued compliance in compliance monitoring programs, will be directed towards ensuring compliance by these lesser emitters.

New Source Performace Standards and National Emission Standards for Hazardous Air Pollutants:

The first five categories of sources subject to NSPS affect the design of between 20 to 70 new and modified sources each year. A second group of NSPS new source standards covering an additional seven source categories was promulgated on March 8, 1974; additional standards to be promugated in 1975 will bring the total number of sources annually subject to these standards to 1,500 in 1976.

NESHAP regulations were first promulgated regulating the emissions of asbestos, mercury, and beryllium from some 600 fixed installations and an estimated 30,000 annual building demolitions and asbestos spray operations. Amendments to these standards were proposed to include an additional 200 fixed installations. Further amendments (except perhaps for vinyl chloride) to these regulations are not anticipated before 1976.

In 1974, over 100 detailed investigations were made which produced about 25 sources that were subject to the first set of NSPS; five of these are now operating in full compliance while the remainder are still being built. With respect to NESHAP, all 600 of the fixed stationary emitters of hazardous pollutants have been investigated by the EPA regions; 500 of these were determined to be in compliance with the allowed emission limits while the remaining 100 were placed on schedules to comply before April 1975. Less than 10 percent of the 30,000 building demolitions and asbestos spraying operations were investigated, however, due to limited EPA resources.

Delegation of the major portions of NSPS and NESHAP enforcement authority to States is a high priority of the Agency's air enforcement effort. The 1975 program plans target delegation of NESHAP enforcement to 38 States and NSPS to 37 States. The delegation process has been streamlined and the degree of delegation can be tailored to the State's strengths (i.e., delegations can be made for a single pollutant, source category, or even program effort such as compliance monitoring, field investigation, or enforcement proceedings). In addition, about five percent of the State control agency grants from EPA are set aside for issuance to those States which are delegated significant portions of NSPS and NESHAP. It is hoped that this inducement, coupled with the tailoring of delegations and simplification of procedures, will result in close to the targeted amount of delegation in 1975.

1975 Accomplishments

SIP's:

The 1975 program is designed to:

- Identify and investigate 98 percent of the 100 ton sources, through EPA and State efforts;

- Have 85 percent of the 100 ton sources in compliance with SIP emission limitations through State and EPA coordinated efforts;
- Implement programs to ensure:
    - -- annual compliance status verification of all 100 ton sources by States and/or EPA, and
    - -- that progress of all 100 ton sources on schedules is monitored by State and/or EPA;
- Utilize control agency grants to track and improve State efforts;
- Conduct 3,280 EPA field investigations to determine source compliance;
- Initiate 690 enforcement actions (notices of violation, enforcement orders, and civil or criminal suit referrals to Justice Department);
- Continue to provide technical and legal assistance to States to stimulate the development of strong, effective State enforcement programs; and
- Implement priority enforcement programs for categories of major emitters violating emission requirements.

NSPS and NESHAP:

- Achieve 90 percent compliance by sources subject to NESHAP requirements (remainder on schedule) except for spraying and demolition sources;
- Delegate NESHAP to 37 States;
- Achieve 100 percent compliance by sources subject to NSPS; and
- Delegate NSPS to 38 States.

1976 Plan

The compliance monitoring programs initiated in 1975 will become even more important in 1976. Sources brought into compliance by the installation of pollution control equipment will need to be checked frequently to assure continue compliance.

Since proper operation and maintenance of abatement controls is difficult and expensive, widespread violations of standards may occur without an adequate State and EPA surveillance effort. As in 1975, EPA will also need to devote special attention to ensuring that some categories of heavy emitters achieve and maintain compliance with applicable emission limitations.

Tentative projection from air quality data indicates that a significant number of Air Quality Control Regions (primarily major urban areas) will not meet NAAQS by the statutory deadline. The reasons for this are manifold but among them is the need to more effectively enforce the present requirements in SIP's and to revise those requirements that need to be made more stringent. In those areas not meeting health related standards, EPA and State enforcement efforts will not only have to strengthen their surveillance/enforcement related to point sources but may also have to focus increased attention on sources emitting less than 100 tons annually.

The attainment and maintenance of NAAQS in 1976 will undoubtedly require EPA and the States to focus on a much larger universe of sources in certain areas. Compliance schedules will have to be developed for the sources coming under control for the first time as well as for a number of minor sources. In some instances compliance schedules now in place will have to be made more stringent. In both instances, the challenge facing the EPA and State compliance monitoring and enforcement efforts will be significantly greater than in past fiscal years. Resources not required for monitoring the compliance of major emitters brought into conformance with applicable emission limits in past fiscal years will be applied to ensuring compliance by selected categories of minor emitters in 1976. While full compliance will not be achieved in 1976 by all these smaller sources, the increased effort should result in the most rapid progress towards clean air.

NSPS/NESHAP

An estimated 1,500 sources are expected to be covered by 30 NSPS source categories in 1976 as compared to the 750 sources affected during 1975. This increasing coverage will require EPA to focus more attention on NSPS enforcement activities pending delegation to States.

For NESHAP, it is anticipated that approximately 250 asbestos sources and 200 sewage sludge (mercury) incinerators are expected to be added to the universe of sources covered by

NESHAP in November 1974, plus about 35 vinyl chloride sources. Given the anticipated level of State delegation, this increase in coverage will require additional EPA effort to assure compliance.

In addition to the increased coverage of sources as a result of NSPS/NESHAP promulgations, EPA is expected to publish regulations to implement Section 111(d) of the Clean Air Act relating to "noncriteria" pollutants. Standards are expected during 1975 for fluorides and sulfuric acid mist covering more than 450 major industrial facilities. Both of these programs will rely heavily on delegated State activity as no additional resources are available within EPA.

1976 Objectives

SIP's:

The 1976 program is designed to:

- Achieve 90-95 percent compliance by 100 ton sources with SIP emission limitations;
- Verify compliance status of 100 percent of 100 ton sources through coordinated EPA and State compliance monitoring programs;
- Continue to utilize control agency grants as an incentive to improve State efforts;
- Continue to provide technical and legal assistance to States to ensure strong and effective enforcement programs;
- Conduct 3,500 EPA field investigations to determine source compliance status;
- Initiate 700 EPA enforcement actions (notices of violation, Enforcement Orders, civil/criminal suit referrals)to the Justice Department;
- Continue to implement priority enforcement programs for categories of major emitters;
- Initiate intensive enforcement program for Air Quality Control Regions exceeding the health related air quality standards; and

- Establish centralized compliance monitoring technical capability as part of existing ORD/NERC Durham operation.

NESHAPS:

- Achieve 98 percent compliance by sources subject to NESHAPS, excluding spraying and demolition sources;
- Achieve 80 percent compliance by spraying and demolition sources subject to NESHAPS;
- Delegate new amendments of NESHAPS to 30 States and increase the number of States delegated major portions of NESHAPS to 45; and
- Implement coordinated EPA and State compliance monitoring programs for sources subject to NESHAPS.

NSPS:

- Achieve 90 percent compliance by sources subject to NSPS;
- Delegate new categories of NSPS to 35 States and increase the number of States delegated major portions of NSPS to 48; and
- Implement coordinated EPA and State compliance monitoring programs for NSPS sources.

Purpose of Increase

Resources requested will allow for continuation of EPA efforts to strengthen and bolster SIP compliance and compliance with NSPS/NESHAPS. In addition to a continuation of on-going efforts, the requested increase will give EPA the ability to provide the additional technical capability to regions which they require in support of their stationary source surveillance enforcement efforts. This capability, located at the existing Research Triangle Park, North Carolina facility, will also provide essential interface with the National Environmental Research Center/Office of Research and Development operations impacting enforcement. The staff will consist of specialists with expertise in air pollution monitoring (stack and ambient) measurement needed at various times by regions but which have not been easily available since it is not cost effective for each Region to hire full time experts. The main purpose of this small but talented group will be to provide expert technical support to EPA Regional and State enforcement programs in the development and defense of compliance status of stationary sources throughout the country. The staff will interface with the Office of Research and Development to ensure that studies concerning remote sensing monitoring and emissions recording produce viable field enforcement tools.

Air

Enforcement

Mobile Source Enforcement

	1975	1976	Change
Mobile source enforcement.......	$2,205,200	$3,128,500	+$923,300

The mobile source enforcement program is directed primarily toward achieving compliance with vehicle emission standards and fuel regulations promulgated by EPA under provisions of the Clean Air Act. The activities of the program include preventing introduction of uncertified new domestic and imported vehicles into commerce; auditing certification procedures of domestic and foreign automobile manufacturers; enforcing vehicle assembly line emission test activity and the recall, warranty and tampering provisions of the Act; developing and enforcing Federal regulations on the availability of regulated fuels; and ensuring compliance with Transportation Control Plans and mobile source aspects of the Air Quality Maintenance Plans.

The activities of the mobile source enforcement program complement the Agency's certification program for prototype new motor vehicles by assuring that manufacturers follow acceptable certification practices; that assembly line vehicles also meet emission limitations; that imported vehicles meet the same standards as domestically produced automobiles; and that the in-use regulatory provisions on recall, warranty and tampering are applied to ensure that vehicles continue to meet standards throughout their useful life.

Enforcement of the transportation control plans is included as part of the mobile source enforcement program since these plans basically require regulation of automobile emissions and usage in order to achieve the national ambient air quality standards. Enforcement efforts include monitoring State and local implementation of control strategies which include motor vehicle inspection and maintenance programs, vapor recovery control systems, and vehicle mile travel reduction measures. In addition, the mobile source enforcement staff will be involved in the development and implementation of air quality maintenance plans in those areas with automotive related pollution problems.

1975 Program and Accomplishments

New Source Activities:

The 1975 program is designed to:

- Perform 25 inspections of all major domestic and foreign vehicle manufacturers certification and production compliance programs and conduct 10 investigations of possible violations and refer violations to the Department of Justice for prosecution;
- Promulgate regulations and begin implementation of a selective enforcement audit program for production vehicles and issue 30 test orders to assembly plants to test vehicles on the assembly line;
- Promugate exemption and exclusion regulations defining which vehicles are subject to Clean Air Act Requirements; and
- Promulgate regulations for catalyst replacement of imported vehicles which have been operated overseas where unleaded fuel is not available.

In-Use Activities:

- Initiate 20 investigations of potential tampering violations and refer cases requiring enforcement action to the Department of Justice for prosecution;
- Update Inspector's Guidebook on tampering;
- Initiate investigations for potential recall orders, issue and audit recall orders, and review self-initiated recalls by manufacturers;
- Promulgate recall regulations establishing procedures for implementing recall provisions for the Clean Air Act;
- Promulgate defect reporting regulations for use in enforcing recall and warranty provisions of the Clean Air Act;
-

- Develop Section 207(a) warranty defects list defining area of coverage by manufacturer vehicle emission warranty; and

- Monitor the importation of over three million vehicles and engines for compliance with emission control regulations, initiate investigations of illegal importations, issue 360 orders that nonconforming vehicles be modified, exported, or bonds thereon forefeited, and refer violations to the Department of Justice for prosecution.

Fuels

- Initiate a national fuels enforcement program and conduct 20,000 fuel inspections of gasoline retail outlets;

- Promulgate leadfree fuel regulations for issuance of step sale notices of contamination at retail gasoline outlets, establish hearing procedures for penalty assessment for violations of gasoline regulations, and for imposition of reporting requirements on suppliers and retailers of leadfree gasoline; and

- Promulgate regulations increasing the general availability of unleaded gasoline in rural counties.

1976 Plan

New Sources:

Although the Clean Air Act provided EPA with the authority and responsibility to test production line vehicles, the Agency has not yet implemented such a program and has relied primarily on the certification of prototype vehicles to assure that new vehicles meet emission standards. Although there have been some reductions in vehicle emissions since the start of the certification program, data available to the Agency suggests that certification alone does not assure that production vehicles will meet standards. Mass production techniques may result in vehicles having different emission characteristics than prototypes, even though designs are identical. Therefore, the Agency has launched a pilot program to test assembly line vehicles in 1975.

Plans call for inspecting both domestic and foreign assembly plants which number at least 68 (50 in North America, 10 in Europe, and eight in Japan). The requested increase provides for the development of an EPA Mobile Enforcement Testing System (METS). The METS system will be used for the purpose of qualifying manufacturers assembly line test facilities where additional testing capability is required to enable the manufacturer to respond to an SEA test order. The METS concept will also be used to perform enforcement related emissions testing at high altitude locations such as Denver, Colorado.

Fuels:

The 1975 fuels program consists of six headquarters and 20 regional office positions. It is the responsibility of the regional staff to sample and test gasoline retail outlets using a mobile laboratory van and a quick screening test. Laboratory, legal, and administrative support must also be provided to the field outlet inspection aspect of the program. We plan to inspect 2,000 suppliers per region or 20,000 nationally. In 1976 we will seek greater assistance from the States to enable a greater volume of retail service station inspections in those regions or the country having relatively larger volumes of service stations. This will assure that each service station would have about a 17 percent probability of being inspected each year.

In-Use:

The activity of the recall program is expected to increase in 1976. Plans call for the promulgation of regulations requiring manufacturers to report defects in emission control components, formalization of fleet and State contacts to obtain defects data, and computerization of a defect reporting system to handle the volume of data anticipated. Caseload is expected to triple as a result of the defect reporting regulations. Quarterly and annual publications of recall activity are also required by the recall procedural regulations and substantial public interest can be expected in this area.

There are two warranty provisions in the Clean Air Act related to emission controls. The warranty provisions are intended to help assure that manufacturers develop and produce vehicles which meet emission standards throughout their defined useful life of 50,000 miles or five years. The resources requested in 1976 will enable EPA to enforce final regulations covering defects which cause emissions to exceed standards. Although the "defects list" is intended to be largely self-enforcing through consumers claims for service under the warranty, EPA resources will be needed to monitor manufacturers' responses and to update the defects list. A significant increase in warranty investigation is anticipated as a result of publication of the defects list.

The aftermarket parts program is an integral part of EPA's warranty and recall functions. In order to alleviate the potentially anticompetitive impact of recall and warranty provisions on the aftermarket parts industry, EPA has committed itself to implementing in 1976 a voluntary self-certification program for certain emission related aftermarket parts. This program will allow the aftermarket parts industry to compete with the original equipment manufacturers while at the same time protecting warranty provisions and controlling emissions. Implementation of the aftermarket program is planned for 1976 and resources are requested to enable EPA to support industry efforts to identify emission related aftermarket parts and to establish test procedures for certifying these parts. EPA resources will also be used to audit and monitor manufacturers' test procedures and to establish test procedures for certifying these parts. EPA resources will also be used to audit and monitor manufacturers' test procedures and to monitor aftermarket parts sales to ensure that actual sales conform with certification.

Implementation of the performance warranty provision with a short test correlatable to the Federal test procedure is also planned for 1975. If the Agency is successful in developing a short test in 1975, regulations will be promulgated and State and local authorities will be encouraged to adopt the short test so that preperly maintained and used vehicles failing such a test could have their emission related parts replaced under the warranty.

Transportation Control:

Transportation Control Plans have been promulgated for 20 States and the District of Columbia covering 34 metropolitan areas. During 1975 and 1976, additional plans may be required for up to 15 additional metropolitan areas. In addition, Air Quality Maintenance Plans will require approximately 160 urban areas to undergo extensive air quality analysis and a number of revisions to existing TCP's can be expected. In 1976 we plan to monitor and enforce implementation of existing TCP's to work extensively with local agencies to assure enforceability of new or revised plans, and to take necessary actions against those localities in the event that TCP's are not implemented as proposed.

1976 Objectives

New Source Activities:

In 1976, EPA plans full implementation of the Mobile Enforcement Testing System for production vehicles and anticipates the issuance of about 60 test orders to assembly plants to test vehicles on the assembly line. EPA will perform inspections of all major domestic and foreign vehicle manufacturers' certification and production compliance programs, and will conduct investigations of possible violations.

In-Use Activities:

EPA will continue to investigate potential tampering violations, monitor the importation of vehicles and engines for compliance with emission control regulations, investigate illegal importations, and issue orders that nonconforming vehicles be modified or exported.

The Agency expects to initiate investigations for potential recall orders, issue recall orders, review self-initiated recalls, and implement the performance and defect warranty provisions of the Act.

A voluntary aftermarket parts certification program to protect competition in the after market will also be implemented.

Fuels:

The fuels enforcement program with State assistance will be expanded to allow EPA to increase inspections of gasoline retail outlets from approximately 20 thousand in 1975 to about 30 thousand in 1976.

Transportation Plans:

EPA will continue to monitor the implementation of TCP's for metropolitan areas, will participate in the development and implementation of new TCP's for those Air Quality Control Regions requiring additional control measures, and will assist in the review, development, and implementation of air quality maintenance plans.

Purpose of Increase

The requested increase will provide resources for additional new source and in-use activities which include implementation of the METS program; continued monitoring of the importation of vehicles; implementation of the defect warranty provisions; implementation of the performance warranty provision; ensuring compliance by retail gasoline outlets with unleaded fuel regulations; continued surveillance of in-use vehicles to ensure compliance with recall and tampering provisions of the Clean Air Act; implementation of a voluntary aftermarket parts certification program; and ensuring State enforcement of TCP's.

Air

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Processes and Effects.........	$38,426,300	$38,437,000	+$10,700
Control Technology......	17,532,500	9,536,600	-7,995,900
Total........	55,958,800	47,973,600	-7,985,200
End-of-Year Employment			
Processes and Effects.........	331	346	+15
Control Technology......	125	108	-17
Total........	456	454	-2

Purpose

The air research and development program is designed to furnish EPA with the knowledge to establish prudent environmental controls based upon known or potentially adverse health and ecological effects; to define, develop, and demonstrate systems for controlling stationary sources; and to evolve strategies for minimizing the emission of pollutants.

To achieve these ends, the program is structured to quantify the effects of air pollutants on man, animals, plants, and the general environment; develop predictive models for pollutant emission, transport, transformation, and removal, and verify these models by actual measurements; develop and standardize techniques for the management of pollutants; and develop new and improved technology for preventing and controlling air pollution and demonstrate the cost effectiveness of such technologies.

Air

Research and Development

Processes and Effects

	1975	1976	Change
Processes and effects.....	$38,426,300	$38,437,000	+$10,700

Research on air processes and effects provides a sound scientific basis upon which to establish and continually evaluate both primary and secondary ambient air quality standards. Research is accomplished in a number of program areas including health effects, ecological processes and effects, equipment and techniques research, and socio-economic studies.

Health effects research involves epidemiological, clinical, and toxicological studies of the impact of air pollutants on the health of man.

Ecological processes and effects research encompasses four major catergories, (1) meteorological research to determine pollutant transport mechanisms; (2) investigations of chemical and physical pollutant processes; (3) determination of the environmental impact of fuel, fuel additives, and catalytic reactor emission-control devices; and (4) assessment of the effects of pollutants upon plants and animals.

Equipment and techniques research develops and improves methods and instrumentation for the measurement of air pollutants in ambient air and from mobile stationary emission sources.

The socio-economic research effort develops cost benefit analyses of various air pollution control strategies.

1975 Program

The objectives for air processes and effects research in 1975 included: (1) expansion of on-going epidemiological and toxicological studies on health effects of exposure to carbon monoxide, nitrogen oxides, sulfur oxides, photochemical oxidants, and hydrocarbons; (2) expansion and acceleration of studies of the health effects of exposure to mobile source emissions and emission products, particularly those associated with vehicles equipped with oxidation catalysts; (3) continuation of the assessment of toxicologic effects of trace metals, including lead, cadmium, arsenic, and selenium; (4) expansion of studies to determine roadside levels of sulfate and catalytic reactor attrition products; (5) expansion of studies on the chemical and physical processes of atmospheric pollutants with special emphasis on the transformation and transport and photochemical oxidants and sulfates; (6) strengthening support of the National Secondary Air Quality Standards for sulfur dioxide by providing plant biochemical indices of air pollution damage; (7) development of measurement methods for particulate organic matter; (8) validation of improved mobile source pollution control methods; (9) improvement of particulate mass and size determination methods; (10) development of odor measurement methods; (11) field test of open path spectral monitors; (12) development and evaluation of multipollutant analyzers; (13) Development and evaluation of prototype x-ray fluorescence analyzer; (14) assessment of the social and administrative feasibility of least-cost control strategies for stationary air pollution sources; and (15) comparision of the effectiveness of regulations vs. emissions charges for achieving ambient SO_2 standards.

1975 Accomplishments

The past year's achievements of the processes and effects program on air pollution include the:

- Publication of the first annual research report on pollutants from vehicles equipped with oxidation catalysts. Results were compiled on all catalyst-related studies in the Office of Research and Development and the Office of Air and Waste Management, including all current results from studies on roadside sulfate levels and noble metal attrition products. Results are expected to contribute to EPA's assessment of mobile emission standards for regulated and non-regulated pollutants;

- Completion of preliminary assessments on potential effects of exposure to compounds of mangenese and cerium which may be associated with mobile source emissions -- this information will be used to evaluate the health impact of fuel additives which may be substituted for lead;

- Publication of a monograph on the health effects of exposure to sulfur oxides--results compiled were obtained from the human epidemiology studies or

Community Health Environmental Surveillance Study (CHESS), program and indicate that adverse health effects may be more closely associated with exposure to sulfate compounds than to sulfur dioxide;

- Completion of developmental phases of design and hardware for a system for intensive environmental and human health characterization--this system includes the Community Health Air Monitoring Program (CHAMP), the Clinical Laboratory Evaluation and Assessment of Noxious Substances (CLEANS), and the Clinical Laboratory Evaluation and Verification of Epidemiological Results (CLEVER);

- Expansion of on-going research on air pollutants for which primary ambient air quality standards have been promulgated as well as on certain pollutants such as sulfate compounds which are currently unregulated. Such studies are aimed at improving information on these pollutants to allow the refinement of the standards themselves and to provide scientific health bases for promulgation of new standards should this become necessary;

- Completion of an 18-city survey of carboxyhemoglobin levels in humans as part of a continuing evaluation of the primary ambient air quality standard for carbon monoxide. It indicated that carboxyhemoglobin may be an indicator of ambient CO levels but that it is also a function of smoking habits;

- Completion of annual reviews of available research results on nitrogen oxides and particulates as part of a continuing evaluation of the primary ambient air quality standards for nitrogen dioxide, and total suspended particulates. The data suggest that short-term peak exposures to nitrogen oxide may be important in health considerations for this class of compounds, and that health information is needed on the effects of particulate size distribution and chemical/physical characteristics;

- Drafting of comprehensive scientific and technical assessment reports on specific pollutants including cadmium, lead from stationary sources, and chromium--these documents provide compilations of what is known about the subject pollutant and indicate areas requiring additional data for the development of effects criteria;

- Initiated a survey of existing repositories of tissue samples with a view toward the establishment of a coordinated, nationwide tissue sample banking system--information obtained through tissue analysis would include data on exposure trends in the population with respect to trace metals, for example;

- Compiled a series of animal studies on nitrogen oxides and ozone which showed exposure to be associated with lowered resistance to infection;

- Established a comprehensive User's Network for the Applied Modeling of Air Pollution (UNAMP) providing user communities with mathematical models for projections of air quality from point and area pollution sources;

- Made a preliminary determination on the urban, regional and multiregional distribution of atmospheric sulfate levels in the United States. Results suggest wide-spead distribution of sulfate at levels which may be near expected thresholds for health effects;

- Conducted a preliminary field investigation on the extent of long range transport of oxidant and its precursors from urban to rural locations. Results suggest that oxidant from one urban area may achieve significant levels in regions 100 km distant;

- Preliminary finding of field studies conducted in the St. Louis area indicate that (a) the conversion rates of sulfur dioxide to sulfate in coal-fired power plant plumes are usually low, with values typically on the order of one to two percent per hour, while oil-fired plants exhibit much higher conversion rates; and (b) negative uptake constitutes one of the major removal mechanisms of sulfur dioxide emitted from low level sources (e.g., urban plumes), and

- Two reports on the expected impacts of auto-catalyst generated sulfuric acid aerosols have been issued, which indicate that significant adverse health effects could occur after operation of two model years of catalyst-equipped cars in California and four model years nationwide.

1976 Plan

The objectives for air processes and effects research in 1976 will include continued efforts to obtain and strenghten the health effects basis for air quality criteria for carbon monoxide, nitrogen oxides, oxidants, hydrocarbons, sulfur dioxide, and total suspended particulates; to characterize the health effects on important noncriteria pollutants with major emphasis on particulate sulfates, nitrates, and trace metals; and to accelerate work on the potential health impact of catalytic muffler related emissions.

Investigation of possible interactive health effects of air pollutants, such as combination of ozone and nitrogen oxides, as well as of the mechanisms of atmospheric pollutant processes including the conversion of NO_x to nitrates and SO_2 to sulfates, and the possible extent of stratospheric O_3 (ozone) destruction by halocarbons, e.g., Freons, will be accomplished.

Monitoring efforts will be aimed at development of measurement methods for ammonia and odor for mobile sources, an advance open-path prototype monitor for gaseous pollutants, an x-ray diffraction method for airborne asbestos, techniques for testing of multipollutant least cost strategies, and a miniaturized SO_2 detection instrument.

We also plan to validate photochemical models used to provide estimates of atmospheric oxidant concentrations; provide information on the intensity and extent of oxidant transport from urban areas to rural locations; demonstrate a fast nitrate determination method; evaluate and compare the desirability of utilizing emission standards versus ambient air standards; and provide an updated report on benefits of air pollution control.

Purpose of Increase

An increase of 15 positions is requested to support on-going research on the health effects of emission products of catalytic converter equipped vehicles. Early findings suggesting possible adverse health impacts of these devices, now coming into wide use, underscore the need to accelerate this research.

Air

Research and Development

Control Technology

	1975	1976	Change
Control technology...	$17,532,500	$9,536,600	-$7,995,900

The air control technology research program was formerly divided into two areas -- stationary source control technology and mobile source control technology. The base mobile source control technology program has now been reassigned to the Energy Research and Development Administration (ERDA), with a small residual effort remaining to provide standards and regulations support for the abatement and control mobile source program. Discussion of this effort will be found in the air abatement and control justification. These resources will be transferred to the abatement and control account during FY 1976.

Stationary source control technology

The stationary source control technology program categorizes pollutants into four types, nitrogen oxides, sulfur oxides, particulates, and hazardous air pollutants.

Nitrogen Oxides (NO_x) are produced in about equal quantities from vehicles and stationary sources. EPA's future control strategy may place primary emphasis on control of NO_x from stationary sources, and allow increased emission from mobile sources. This strategy would require the development and demonstration of improved NO_x control technology. Key to the successful development and application of stationary source NO_x control technology is an understanding of the application of combustion theory to principal source types. The theory has been largely developed. The next step is its application through field tests and demonstrations. EPA has an R&D program that will apply and demonstrate NO_x control theory to major sources. Since the larger demonstration projects on power generation will be done as part of the energy R&D program, the on-going base program will concentrate on smaller systems permitting a major reduction in resource requirements for this program.

Historically, the sulfur oxides (SO_x) control technology program has been oriented toward the control of utility power stations which have long been recognized as the major source of SO_x emissions in the United States. This emphasis upon control of utility emissions has resulted in the development and demonstration of several viable processes for control of this source. Recent studies, however, have established that in most U.S. industrial cities the most important contributors to ambient concentrations of SO_x are industrial processes, industrial scale boilers, and area sources. The large complex techniques developed for the electric utility plant are not applicable to those sources. Also, recent studies have implicated sulfuric acid mist and particulate sulfates as a serious causative factor in respiratory distress and increased morbidity. In view of these factors, emphasis on control of these non-utility sources may be increased. Decreased program emphasis on utility sources of SO_x will permit a substantial decrease in resources required for this program.

The principal sources of particulate pollution are industry, agriculture, and transportation, with the formation of particulates in the atmosphere from gaseous pollutants also providing a substantial contribution. Fine particulates (less than three microns in diameter) remain airborne for long periods of time and accumulate in the atmosphere. They have maximum effect on atmospheric visibility and are inhaled deeply into the lungs where they may have significant health effects. These fine particulates frequently have catalytic effects, with potential to thus contribute to atmospheric reactions causing smog. Control technology for these fine particulates is not adequate and the air pollution control technology program will emphasize improving the control of these fine particulates. Coordination of this program with energy programs permits a substantial reduction in this program.

Most air pollutants defined as "hazardous", or considered to be potentially hazardous are emitted from industrial sources, presenting a difficult control problem since these sources are diverse. Also definitive information regarding the health effects and applicable control technology for the potentially hazardous pollutants is limited. There is not enough quantitative data available for setting standards and consequently the required level of control is unknown. Sources of these pollutants have not been fully identified. This program focuses on the identification and characterization of potentially hazardous pollutants and is supported by the above particulate and gaseous programs to develop control technology.

A substantial investment of resources has been made in the energy related research program. Since a significant fraction of air pollution comes from energy production and consuming processes it is reasonable to expect considerable overlap. The stationary sources control program, and the energy-related research program have therefore been carefully structured to complement each other.

1975 Program

The 1975 nitrogen oxide program is focused on the development and application of fundamental combustion contol technology. This work has advanced to the point where prototypes are needed to demonstrate the most promising systems on full-scale NO_x sources. The present program is directed primarily toward control of combustion sources of NO_x by modifications of combustion equipment designs and processes.

In response to the primary need for control of smaller, non-utility sources of SO_2 the 1975 program was aimed at developing small, simple low cost control systems. Demonstrations of several large scale utility source SO_2 processes, initiated in prior years, are being completed.

The stationary source particulate control program has been focused on fine particulate contol. Measurement and control methods are being emphasized.

A program to identify, characterize and prioritize industrial sources of hazardous pollutants is being pursued and control methods for known hazardous pollutants are being developed.

1975 Accomplishments

- A hazardous materials source assessment program was initiated to provide information for future standards and hazardous pollutant control;
- Demonstrated NO_x control using molecular sieve sorption systems;
- Achieved substantial progress in developing low emission burners and providing understanding of NO_x formation in flames;
- Assessed mobile source pollution control technology

54<

for use in stationary internal combustion engines and gas turbines;

- Completed demonstration of the Mag-Ox scrubbing process, proving the availability of this process for control of SO_2 in power plant flue gas;
- Completed long-term testing of the lime and limestone scrubbing processes, providing sound design data for the engineering and application of cheaper more effective SO_x control systems for power plant flue gas;
- Completed demonstration test program on a high efficiency (99.6 percent) electrostatic precipitator establishing the capability of this device as a total (including fine) particulate dust collector, and
- Constructed and placed in operation a mobile test unit. This unit will provide basic dust collector design information and will provide data for setting and enforcing particulate standards.

1976 Plan

The 1976 program for NO_x control technology development includes the demonstration of catalytic and surface combustion for the control of area sources such as gas-fired space heaters, and small industrial combustion sources. Design concepts for low polluting combustion equipment ranging in size from space heaters to large utility boilers will be developed. Prototype and demonstration projects to provide the application technology required for a wide variety of combustion sources are also planned. These projects will include retrofit design concepts. The program to control NO_x with other than combustion control techniques will be expanded to develope control procedures being identified in the existing 1975 program.

The most promising options identified in the 1975 program for the control of SO_2 from small stationary sources will be given principal support in 1976. A substantial effort will be initiated to determine the lower limits for adaptation of the present large-scale flue gas desulfurization technology to small area sources.

The particulate program will continue existing efforts in control technology. Emphasis will be placed on the control of sources of fine particulates identified in the hazardous pollutant control technology program. This will include an accelerated program of source assessment of potentially hazardous pollutants in order to define problems and develop control technology more rapidly, development of short-term screening tests for identifying pollutant-related health effects, and establishment of a definitive and dependable list of potentially harmful pollutants. Development of control techniques for open source pollutants (i.e., agricultural burning, fugitive dust from road, etc.) as well as measurement techniques for fugitive dust emission, will be continued.

Purpose of Decrease

A substantial investment of resources has been made in the energy-related research program. Since a significant fraction of air pollution comes from energy production and consuming processes, it is reasonable to expect overlap between the base and energy programs. The stationary sources control program and the energy related research program have been therefore carefully structured to complement each other. For example, large NO_x control demonstration projects on electric power generation plants will be done as part of the energy R&D program. The base program will continue to concentrate on smaller and non-energy related sources including industrial processes and area sources. Similarly, energy resources will supplement base program particulate control technology developments. As a result a reduction of $8 million in base program resources is possible.

Water Quality

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control......	$111,190,800	$144,521,900	+$33,331,100
Enforcement....	24,064,800	21,293,500	-2,771,300
Research and Development..	46,373,200	44,892,400	-1,480,800
Total......	181,628,800	210,707,800	+29,079,000
End-of-Year Employment			
Abatement and Control......	1,664	1,729	+65
Enforcement....	890	744	-146
Research and Development..	588	581	-7
Total......	3,142	3,054	-88

Overview and Strategy

Evidence has been gathered to indicate that almost one stream or river mile out of every three is markedly polluted whether measured by oxygen demanding loads and bacteria count, nutrients such as nitrogen and phosphorus, other pollutants such as industrial compounds and suspended solids, or heavy metals and pesticides. These impacts result from the point source discharge of waste from industrial, commercial, agricultural, and municipal sources and the non-point source discharge and runoff from activities that cover a broad land area and are mostly diffuse in nature. These nonpoint sources include agricultural, silvicultural, mining, and construction activities and runoff from urban areas.

Activities have initially focused on the abatement of industrial and municipal point sources.

The relative magnitude of pollution is fairly evenly divided among industry, agriculture, and communities. The biggest user of water is industry--over 200 billion gallons a day, two-thirds of which is used for cooling. It is estimated that over 30,000 applications will be received from this sector for discharge permits. The next biggest user of water is agriculture with a daily intake of about 130 billion gallons. The Nation's farm animals produce about as much waste as two billion people although only a portion of that ends up in our waterways. The largest agriculture discharge, however, is irrigation water often infused with pesticide and fertilizer residues and natural salts. Additional pollutant loads include an estimated four billion tons of sediment a year, most of it from farm and forest land and the drainage of acid and other contaminants from some 11 million acres of mined land. An estimated 6,500 discharge permit applications are expected from the agricultural sector. Communities use only about 30 billion gallons of water a day. However, only half of the Nation's population is served by sewage systems that provide adequate treatment. Over 30,000 discharge permit applications, including 10,000 to 15,000 from privately owned treatment works, are expected to be ultimately received from community waste treatment sources.

As a means for evaluating actual progress in improving the Nation's water quality, EPA conducted a National Water Quality Inventory in 1974. The Inventory Report focused on 22 major waterways, approximately 5,000 major point sources, and major problem areas in 56 States and territories. The Report shows that the pollutants that have received the most widespread controls, including oxygen demanding loads and bacteria, are improving. On the other hand, nitrogen and phosphorus, the nutrients most often associated with eutrophication, showed worsening trends.

Legislated Federal involvement in water pollution control began in 1948 in a very limited way. There were antecedent laws such as the Rivers and Harbors Act at the turn of the century whose water pollution control authorities were not utlized until 1970. The Congress, in a series of six amendments to the 1948 Federal Water Pollution Control Act from 1952 through 1970, gradually broadened the scope of Federal participation and assistance.

It was recognized that the pollution of the Nation's water was continuing to increase; that differences in the degree of emphasis among States were fostering economic and competitive inequities; that existing legal mechanisms for abating discharges were often weak and insufficient; that costs of control required increased Federal funding and that uniform national norms were needed to protect the progress that had been achieved. In response, the Congress established as law the most comprehensive pollution control act ever enacted--the Federal Water Pollution Control Act Amendments of 1972, which significantly accelerated the Nation's pollution abatement program.

Federal and State governments have now been operating under the provisions of the Act for over two years. Top priority has been given to issuance of waste discharge permits to point sources, funding of publicly owned waste treatment works, and the compliance monitoring, technical assistance, and enforcement necessary to assure that permit conditions are met and that waste treatment plants are operated effectively. These activities are supported by monitoring and analyses to determine water quality dictated levels of control for critical stretches of water, promulgating guidelines and standards, setting national norms for comparable levels of control for all industrial discharges, and planning to assess and structure future program needs and solutions.

The Act basically encompasses a 10 year period from October 1972 to June 1983. Two important dates by which all point sources should have achieved a legislatively specified level of control occur in 1977 and 1983. By July 1, 1977, industries are to use the best practicable technology to control water pollution and the best available technology by July 1, 1983. Publicly owned waste treatment plants are required to provide a minimum of secondary treatment by July 1, 1977, and to apply the best practicable technology by July 1, 1983. Various interim steps occur on a continuing basis leading up to these dates. These include some of the activities previously described which are complemented by enforcement and research and development, and which are supplemented by other specifically focused programs such as lake restoration, economic studies, annual quality assessments, and management of nonpoint sources.

The costs which will be required to implement these controls levels are estimated in the 1974 Clean Water Report to Congress. It was estimated that about \$12 billion would be required by industries to meet the 1977 goal of best practicable control technology. The total need to achieve the secondary treatment level for the municipal sector was estimated to be approximately \$36 billion in the 1973

Municipal Needs Survey. This figure excludes needs for collection systems, storm water overflow, and correction of infiltration problems. Total needs including these problems were estimated at more than $60 billion.

The principal responsibility for conducting many of the tasks under the Act is assigned to the States. Local communities conduct several types of planning and construct treatment facilities. EPA's role is to coordinate nationally all the many and various aspects of the Act, overseeing their implementation, and where a State is unable to act, to carry out the activity. Additionally, EPA performs those activities which are singularly assigned to it under the law. The magnitude of the task demands that a continuing cooperation exist among all levels of government as each conducts its appropriate role.

Because of the long term phased nature of the Act, many activities are proceeding in a sequenced fashion. Top priority has been given to research and development efforts concentrating on the technological and informational needs related to the 1983 objective. Areawide and basin planning are also oriented toward this date. As permits are issued and their requirements come into effect, enforcement activities to assure compliance with these terms will accelerate. Much of the preparatory activity such as planning and permits related to the achievement of the 1977 goal have been completed. Under a continuing cycle, efforts leading to the second round of permit issuance are commencing. These include stream analyses of water quality, development of water quality based pollutant reduction where needed, and revised criteria. Research studies lead directly into revised criteria by providing more complete data and better values.

The great bulk of Federal environmental funding is allocated to the water program. These Federal funds are supplemented by sizeable amounts of State and local monies. This funding level reflects the major investment in publicly owned facilities that must be constructed to abate a principal source of water pollution--the discharge from municipal sewerage facilities.

The investment in municipal facilities is supported by Federal and State review of grant applications for cost effectiveness and compliance with the various requirements of the law; by an operations and maintenance program to assure that the facility operates at its capability; and by assistance in the training of operators. Research and development projects examine more effective and economical technologies in an effort to reduce the total cost.

Initial studies and efforts to develop the frame work for managing nonpoint source pollution are being initiated. As point sources are increasingly abated, nonpoint pollution will become an ever larger factor.

Technological research will assist in formulating effluent standards for industrial discharges. Existing effluent guidelines need to be reviewed and revised so that they can be successfully utilized in the second round of permit issuance which will occur in several years.

Summary of Increases and Decreases

1975 Water Quality Program....................	$181,628,800
Abatement and Control....................	+33,331,100
Net increase results from including areawide planning as budget authority partially offset by the reprogramming of resources.	
Enforcement..............................	-2,771,300
Reduction in manpower from the permit program due to shift from permit issuance to compliance monitoring and enforcement and a decrease in funds resulting from the termination of the General Point Source File (GPSF).	
Research and Development.................	-1,480,800
Net reduction results from a "one-time" 1975 congressional increase of $5.0 million for municipal control technology, partially offset by increases for water quality health effects and for accelerated research in non-point source management.	
1976 Water Quality Program Request............	210,707,800

Water Quality
Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control			
Ambient Trend Monitoring...	$6,204.9	$5,167.8	-$1,037.1
Technical Assistance and Planning..................	22,651.7	70,878.0	+48,226.3
Academic Training..........	2,770.0	1,870.0	-900.0
Control Agency Support.....	45,664.3	34,375.0	-11,289.3
Municipal Source Control...	17,946.4	18,305.0	+358.6
Industrial Source Control..	8,986.9	6,999.2	-1,987.7
Nonpoint Source Control....	1,617.9	1,606.7	-11.2
Ocean Disposal and Spill Prevention...............	5,348.7	5,320.2	-28.5
Subtotal................	111,190.8	144,521.9	+33,331.1
Enforcement			
Water Quality Enforcement..	24,064.8	21,293.5	-2,771.3
Research and Development			
Processes and Effects......	18,779.7	19,790.5	+1,010.8
Control Technology.........	27,593.5	25,101.9	-2,491.6
Subtotal................	46,373.2	44,892.4	-1,480.8
Total.................	181,628.8	210,707.8	+29,079.0
End-of-Year Employment			
Abatement and Control			
Ambient Trend Monitoring...	248	190	-58
Technical Assistance and Planning..................	506	527	+21
Academic Training..........	...	...	...
Control Agency Support.....	...	...	...
Municipal Source Control...	681	791	+110
Industrial Source Control..	46	45	-1
Nonpoint Source Control....	28	27	-1
Ocean Disposal and Spill Prevention...............	155	149	-6
Total	1,664	1,729	+65

	1975	1976	Increase or Decrease
Enforcement			
Water Quality Enforcement	890	744	-146
Research and Development			
Processes and Effects	327	327	...
Control Technology	261	254	-7
Subtotal	588	581	-7
Total	3,142	3,054	-88

Water Quality

Abatement and Control

	1975	1976	Increase or Decrease
Budget Authority			
Ambient Trend Monitoring.......	$6,204,900	$5,167,800	-$1,037,100
Technical Assistance & Planning..	22,651,700	70,878,000	+48,226,300
Academic Training.	2,770,000	1,870,000	-900,000
Control Agency Support..........	45,664,300	34,375,000	-11,289,300
Municipal Source Control..........	17,946,400	18,305,000	+358,600
Industrial Source Control..........	8,986,900	6,999,200	-1,987,700
Nonpoint Source Control..........	1,617,900	1,606,700	-11,200
Ocean Disposal and Spill Prevention..........	5,348,700	5,320,200	-28,500
Total..........	111,190,800	144,521,900	+33,331,100
Contract Authority			
Areawide Waste Treatment Management Grants:			
Liquidation of Contract Authority........	26,000,000	65,000,000	+39,000,000
Contract Authority........	150,000,000	...	-150,000,000
End-of-Year Employment			
Ambient Trend Monitoring.......	248	190	-58
Technical Assistance & Planning..	506	527	+21
Academic Training.	...	...	...
Control Agency Support..........	...	...	...
Municipal Source Control..........	681	791	+110

	1975	1976	Increase or Decrease
End-of-Year Employment Continued			
Industrial Source Control..........	46	45	-1
Nonpoint Source Control..........	28	27	-1
Ocean Disposal and Spill Prevention..........	155	149	-6
Total..........	1,664	1,729	+65

Note: 1976 funds for Technical Assistance and Planning include $53,000,000 in budget authority for Areawide Waste Treatment Management Planning Grants, formerly funded under contract authority.

Purpose

The water abatement and control program encompasses those activities carried out by EPA to implement the Federal Water Pollution Control Act Amendments of 1972, with the exception of activities related directly to research and development and to enforcement, which are covered under separate appropriations.

The objective of abatement and control programs is primarily to assist State and local agencies in abating and controlling water pollution by providing management, technical, and resource assistance and through disseminating guidelines and standards. These guidelines set methods and procedures and levels of control for sources of pollution. Water quality criteria and standards are applied to the receiving waters and are subsequently reflected in the level of control placed on the source. Management assistance is provided in developing regional planning agencies, improving municipal waste control management, and in monitoring and reporting on ambient water quality and changes in quality. Technical assistance includes general assistance on controlling persistent and complex pollution problems as well as specific response assistance for spills or other pollution emergencies.

Because a primary responsibility for the control of pollution lies with the States, most of EPA's abatement and control efforts are oriented toward support of State and local efforts. States are responsible for detailed planning, monitoring, and enforcement efforts, as well as establishing the priorities for commitment of Federal funds for the construction of sewage treatment plants.

Federal funds support planning at the State level. Additional grants support development and operation of State water pollution control agencies, which include the functions of construction grants review, permits, monitoring, and other implementation measures. States are encouraged to undertake the issuance of industrial and municipal permits and conduct the enforcement program to ensure compliance with permits.

EPA monitoring and surveillance activities are coordinated with State and other Federal efforts and include ambient water quality monitoring, collection and dissemination of information and water quality data, and compliance monitoring of specific types of pollution sources.

Technical assistance and information is provided to assist in applying technology, developing standards, and instituting effective programs and source management. A major program thrust involves the development and establishment of industrial effluent (point source) guidelines on best practicable and available technologies, effluent and pretreatment standards, and regulations for all industrial categories. Assistance and technical development efforts will continue on nonpoint sources that could lead to eventual development of a national control program. A spill prevention program focuses on developing and maintaining regional and State contingency plans to mitigate the effects of pollutant spills.

EPA provides or supports training to improve the skills of State and local water pollution control personnel as well as to increase the availability of water pollution control manpower. Skills which are addressed range from plant operators to plant designers and managers. Also, under this program, EPA assists other Federal agencies to bring their facilities into conformance with prevailing pollution standards and helps to ensure that the programs, projects and other activities of Federal agencies produce a minimum water pollution impact.

An immediate practical objective of this training and assistance is to assure compliance, by a maximum number of treatment authorities, with discharge permit conditions established under the National Pollutant Discharge Elimination System. An equally important objective, for municipal wastewater treatment authorities, is to assure the cost effective operation and maintenance of treatment works built with Federal construction grant funds.

1975 Accomplishments

Major accomplishments or outputs in 1975 include:

- All States in possession of fully approved standards for all of their water;
- Approval of 86 areawide planning agency designations;
- Full implementation of the Oil Pollution Prevention Regulation;
- Final regulations for 28 industrial categories and final pretreatment regulation for some existing sources;
- Development of guidelines and regulations with respect to State planning efforts, under Section 208;
- Full implementation of 10 regional nonpoint source pilot projects;
- Issuance of all major and virtually all minor municipal permits in 1975;
- Submission of Section 305(a) Water Quality Inventory to Congress;
- Revised regulations relating to the control of sewage from vessels and the approval of no discharge areas;
- Regulation pertaining to placement of dredged or fill material;

- Establishment of 50 State programs to assure the cost effective operation and maintenance of municipal wastewater treatment works constructed with Federal funds, and to assure compliance by all municipal treatment works with NPDES permit requirements; and

- Initiation of a clean lake program to evaluate lake restoration technology.

1976 Plan

Some primary objectives for 1976 include:

- Completion of plans for all navigable waters under Section 303(e) to provide the basis for examining the appropriate levels of control for point and nonpoint sources within the basin;

- Development of areawide plans under Section 208 in 66 designated areas;

- Development of guidelines for the issuance of discharge permits specifying effluent limitations to industries, and guidelines representing best practicable and best available technology for various industries;

- Approval of Federal grants for the construction of municipal sewage treatment works to enable them to achieve required effluent levels;

- Study of the nature and extent of nonpoint sources of pollution; and

- Assessment of areas in which water pollution is most serious.

Water Quality

Abatement and Control

Ambient Trend Monitoring

	1975	1976	Change
Ambient trend monitoring.......	$6,204,900	$5,167,800	-$1,037,100

The water quality monitoring program provides for the collection, processing, and analysis of water quality and water management data to implement the Federal Water Pollution Control Act Amendments of 1972. The main analytical tasks are to determine water quality, to measure changes in this quality, and to relate these changes to policy alternatives. The main data processing activities are to maintain water quality data files to support policy analyses and permit issuance, and to maintain operational data files in order to manage programs such as permit issuance and permit enforcement. The main data collection programs are for water management data (largely for the permit program), for the National Water Quality Surveillance System, for State monitoring programs, and for compliance and enforcement programs.

1975 Program

The ambient trend monitoring subactivity includes monitoring programs, data processing activities and analyses. For 1975, the monitoring programs will focus on the completion of selected waste load allocations; compliance and effluent monitoring to determine compliance with permit effluent conditions and to characterize waste discharges; collection of paired station (upstream and downstream from pollution source) data for the National Water Quality Surveillance System and the determination of cause and effect relationships on water quality; assistance in the development of State monitoring strategies; and the systems design of the groundwater portion of the National Water Quality Surveillance System.

Data processing activities will be directed toward ensuring the quality and completeness of data in the General Point Source File; operation and maintenance of the General Point Source File, the State Program Reporting System and the Water Quality File and the training assistance of users; and the establishment of management procedures so that the data processed reflects monitoring priorities and so that data quality and availability are enhanced.

Analysis efforts in 1975 will focus on analysis of State Section 305(b) Water Quality Inventory submissions and completion of the National Water Quality Inventory under Section 305(a); analysis of water quality trends through paired station data obtained through the National Water Quality Surveillance System; development of a list of municipal permit nonfilers; and analysis of the impact of effluent guidelines on water quality.

1975 Accomplishments

- Establish a management program for the Water Quality File;
- Regional analyses of State Water Quality Inventories;
- Final effluent guideline for residual category of dischargers;
- Analysis of implications of EPA's municipal construction grant program, using data merged together from separate municipal data files;
- Pilot laboratory quality evaluation projects (Region I will evaluate quality control procedures for its States);
- Model State monitoring program will be updated to include priorities and small States;
- Guidelines on regional/State monitoring relationships;
- Agreement with each State on monitoring strategies to ensure reorientation of State monitoring programs to be consistent with the Federal Water Pollution Control Act, as amended;
- Collectionof paired station data for National Water Quality Surveillance System (NWQSS), systems design of groundwater sectionof NWQSS analysis of paired station data for national overview section of Section 305(b) Water Quality Inventory, and conduct

of intensive surveys between selected pairs to determine cause and effect relationships (pilot projects); and

- Submission of Section 305(a) Water Quality Inventory to Congress.

1976 Plan

The ambient trend monitoring program will feature a reorientation of emphasis from 1975 to 1976 that will be consistent with the Agency shift from a permit issuance program to a permit compliance program. Thus, monitoring and analysis for permit issuance will be replaced by monitoring and analysis for permit compliance and for evaluation of the ambient impact of water pollution control programs. By 1976, a program for the management of EPA ambient water quality data will have been established and file cleanup and control procedures for input data will be implemented.

Purpose of Decrease

The decrease results from the termination of the development of a computerized inventory of point source dischargers known as the General Point Source File (GPSF). The important management needs that GPSF would have met will be provided by other, less expensive, data systems. Thus, our information needs will not be seriously hurt by this decision, and we will be able to redistribute the resulting personnel savings to higher priority agency programs. Other monitoring resources have also been redirected to higher priority programs.

Water Quality

Abatement and Control

Technical Assistance and Planning

	1975	1976	Change
Technical assistance and planning......	$22,651,700	$70,878,000	+$48,226,300

This area includes funds for water quality planning, technical information, Federal activities, and standards and regulations development.

Water quality planning..........	($9,495,800)	($61,112,400)	(+$51,616,600)

Three major planning activities are conducted under the Act. These are (1) basin water quality management plans prepared by the States, covering all interstate waters; (2) areawide waste treatment management plans to develop a comprehensive control strategy; and (3) facilities plans which are the first step in the construction of municipal waste treatment facilities.

Basin planning activities conducted by a State or municipal control agencies are funded by EPA under Sec. 106 of the Act, areawide planning under Sec. 208, and sewage treatment facilities planning under the construction grants authority.

Basin plans provide for collecting water quality and waste discharge data; establishing the amount of pollutant removal required to achieve water quality standards and, as necessary, setting pollutant removal targets for major sources; providing the data base for the annual water quality assessment and projection report; developing the framework for assessing the appropriate methods and procedures for nonpoint sources management; and developing a mechanism for alleviating the effects of residual solid waste disposal.

Facilities plans evaluate alternative waste management techniques prior to the selection of a facility design. An essential element in this planning is the incorporation of cost effectiveness consideration.

Funds are provided under this subactivity for Great Lakes demonstration projects under Section 108 of the Act. These projects demonstrate various management techniques to control and abate pollution in the Great Lakes.

Through its water quality planning efforts, EPA provides assistance in the development of plans, provides technical support in the preparation and analyses of stream waste load analyses, and reviews and approves plans as they are completed. In addition, EPA develops and disseminates regulations and guidelines to assist in these various planning activities.

1975 Program

Planning activity in 1975 focuses on development of guidelines and regulations to assist State planning efforts in the development of areawide plans under Section 208 and in the implementation of nonpoint source control. Assistance is also being provided to the States in review and approval of basin plans. In addition, review and assistance is provided on facilities plans developed by local communities. Finally, funding in support of Great Lakes demonstration projects is being continued.

1975 Accomplishments

1975 planned accomplishments include:

- Development of guidelines and regulations with respect to States planning efforts under Section 208;
- Review of 400 facilities plans;
- Review of approximately 600 basin plans and approval of 300; and
- Approval of 100-130 areawide planning agency designations.

1976 Plan

Water quality planning in 1976 will feature a build-up in areawide planning activities as additional areas are designated and planning activities commence. The initial phase of basin planning under Section 303(e) will have been completed and resources will be directed to support development of areawide plans. Some of these resources will also be directed to support facilities plans review in areas where this workload is also expected to increase substantially.

An extension of the Areawide Waste Treatment Management Planning program is planned for 1976 at a reduced funding level in order to extend Section 208 areawide planning to an additional 66 designated urban areas. This will provide for the development of areawide plans for an additional 20 percent of all metropolitan areas and will initiate statewide Section 208 planning for nonpoint sources in nonurban areas. 1976 will mark the beginning of a major effort to attack the problem of nonpoint source pollution.

Purpose of Increase

The apparent increase is due to the shift in funding of Section 208 Areawide Waste Treatment Management Planning Grants from contract authority to budget authority. In actuality, the funds available to fund water planning activities in 1976 will be substantially reduced. This results from a "one-time" 1975 congressional increase of $1.0 million for nonpoint source control to be conducted under areawide planning activities.

	1975	1976	Change
Technical information and assistance....	($10,316,600)	($6,933,900)	(-$3,382,700)

EPA provides technical guidance, assistance and information to States, other Federal agencies, and local agencies to assist with the development of water pollution control programs. These activities include assisting States in the preparation of their annual plans for the prevention, reducing, and elimination of water pollution; providing guidance on the setting of standards; developing uniform laws and international agreements for controlling border pollution; disseminating technical information concerning scientific and engineering advances; and providing technical consultations, as required. Also included under this subactivity is: an assessment of the status of pollution in the Nation's estuaries and preparation of a report to Congress on the assessment; identification and designation of priority for removal and removal of in-place toxic pollutants in harbors and waterways; development and publication of quality criteria for water; development and publication of lake restorative methods and procedures; promulgation of a regulation to control aquaculture; and promulgation of a regulation to control the placement of dredged or fill material. Because water quality criteria provide the technical basis for many Agency programs and regulations, major emphasis has been placed on their development. Finally, funding is also provided under Section 104(h) of the Act to develop the most environmentally sound and cost effective methods for the restoration of lakes.

1975 Program

Technical information and assistance will emphasize preparatory work on evaluating and revising the triannual report on the Nation's estuaries and publishing several regulations on aquaculture projects and vessel wastes. A clean lakes program will be initiated to evaluate methods and procedures for the cost effective restoration of lakes.

1975 Accomplishments

Planned outputs for 1975 include:

- Develop quality criteria for water, based on the latest scientific information;
- Conduct a symposium on water quality integrity factors;
- Conduct a symposium workshop on the status of the Nation's estuaries and complete the report to Congress;
- Publish the proposed regulation relating to the control of sewage from vessels and the approval of no discharge areas;
- Publish a regulation pertaining to aquacultural projects;
- Propose a regulation pertaining to placement of dredged or fill material;
- Complete the report assessing current knowledge about in-place toxic pollutants in harbors and waterways and develop a method of assigning priorities for the removal of the in-place toxicants; and
- Initiate 8 to 10 clean lakes projects.

1976 Plan

Activities for 1976 will include:

- Completion and publication of a report on water quality integrity factors;
- Completion of a documentary film on the status of estuaries, publication of a regulation on control of sewage from vessels, approval of no discharge areas, and of a regulation on placement of dredged or fill material;
- Continuation of water quality criteria development in concert with latest scientific information;
- Issuance of pollution discharge permits for approved aquaculture projects; and
- Investigation of harbors and waterways that are of critical importance and which require additional study to provide the basis for a decision for the removal of in-place pollutants.

Purpose of Decrease

The decrease results from a "one-time" 1975 congressional increase of $4.0 million to initiate a clean lakes program.

	1975	1976	Change
Federal activities..	($2,282,600)	($2,365,500)	(+$82,900)

EPA supports other Federal agencies in ensuring that their activities produce a minimum water pollution effect and do not violate applicable standards. Executive Order 11752 requires that all installations owned or leased by the Federal Government comply with established Federal, State and local air and water pollution control standards. In addition, Executive Order 11514 requires that Federal agencies prepare environmental impact statements (EIS) on proposed actions. The statements are submitted to EPA for review and comment.

The water quality Federal activities program includes development of guidelines relating to the control of water pollution from Federal facilities, consultation and technical assistance to Federal agencies in development and implementation of their water pollution control programs, preparation of EIS's on certain EPA actions having a significant impact on the environment, review of agencies' draft and final environmental impact statements to determine the impact on the water environment of proposed Federal projects or federally funded or licensed actions; and assistance to the agencies in improving the environmental protection measures associated with such actions.

EPA guidelines (and OMB circulars) provide specific instruction to Federal agencies in such matters as compliance planning, monitoring, exemptions, data needs, operator training and certification, and land management. Such activities have been instrumental in attaining several environmentally protective measures. For example, in regard to oil lease drilling/pipeline operations, EPA has successfully urged biological baseline studies in the Gulf of Mexico, limitation on multiple operations on single platforms, use of pipeline corridors to minimize biotic disturbance, and use of pipeline transport instead of barging of offshore production.

A recently initiated activity involves development of model municipal EIS's and specific stepwise procedures using established guidelines. The purpose is to guide the regions in preparing EIS's more efficiently and improving their quality.

1975 Program

Federal activities will highlight the development of a compliance strategy for Federal agencies, development of model environmental impact statement; review and comment on environmental impact statements from EPA and other Federal agencies; and review of water pollution abatement projects.

1975 Accomplishments

1975 planned accomplishments include:

- Develop good quality model environmental impact statements which document EIS preparation procedures for planning construction of municipal waste water treatment works;

- Review and comment on about 1,500 environmental impact statements from EPA and other Federal agencies;

- Contribute significantly to an EPA manual on preparation of impact statements for waste water treatment works and Title II Plans;
- Develop a water compliance strategy for Federal agencies, for incorporation into intermedia strategy required by Executive Order 11752;
- Develop evaluation procedures for use in prioritizing pollution abatement projects proposed for funding by Federal agencies; and
- Review nearly 500 water pollution abatement projects and recommend funding priorities to OMB.

1976 Plan

Planned activities for 1976 will include:

- Providing continued consultation to Federal agencies on Federal installation water pollution control and environmental matters;
- Reviewing NPDES water discharge permit applications from Federal facilities and recommending conditions of issuance;
- Reviewing and commenting on about 1,600 new environmental impact statements and emphasizing follow-up on implementation of projects covered by previously reviewed statements;
- Monitoring Federal facility compliance with applicable water quality standards and implementation schedules;
- Reviewing and evaluating Federal agency budget proposals for installing water pollution control measures and recommending funding priorities to OMB;
- Developing comprehensive water quality related program guidance to regional offices, Federal agencies, and States for implementing the requirements of Executive Order 11752; and
- Developing and refining water quality related guidance for the preparation and review of EPA and other Federal agency environmental impact statements.

Purpose of Increase

To support the full-year cost of the October 1974 pay raise.

	1975	1976	Change
Standards, regulations and guidelines....	($556,700)	($466,200)	(-$90,500)

EPA is responsible for revisions to intrastate water and interstate water quality standards. Standards establish the uses of water bodies, water quality criteria needed to protect these uses, and implementation plans detailing pollution control measures necessary to achieve these criteria. In addition, EPA continues to update all approved standards to include new information on toxic substances.

1975 Program

Activities for 1975 include development and publication of guidelines for the review and revision of water quality standards to guide the States in their standard revision efforts.

1975 Accomplishments

- Attainment by all States of approved water quality standards, and
- Assistance to all States in their revision and review of standards.

1976 Plan

The Act requires that all State water quality standards be reviewed and, if necessary, revised at least once every three years. The initial review was principally conducted in 1973 and completed in 1974. The second review of these standards will occur beginning in 1976 and will encompass introduction of revised water quality criteria values, an antidegradation policy, and inclusion of standards for wet weather flow.

Purpose of Decrease

The decrease reflects the reprogramming of four positions and associated funds to support increased construction grants activities.

80<

Water Quality

Abatement and Control

Academic Training

	1975	1976	Change
Academic training..	$2,770,000	$1,870,000	-$900,000

Academic training is the focal point for all professional training and education activities under EPA's water program. It is through this academic training support that national professional manpower needs are addressed. Grants are awarded to institutions of higher education to meet a variety of legislated and required programs. Efforts in this area are divided into four primary categories: the professional training grant program, the graduate fellowship program, professional training curriculum activities, and undergraduate training grants.

1975 Program

The professional training grant program provides for training graduate level students in water related engineering and environmental sciences. In 1975, 645 graduate trainees will be supported at 54 institutions. Under the graduate fellowship program, one employee from each of the 53 State and territorial water pollution control agencies is selected by the director of that agency to spend one year in a water related graduate program. Upon completion of their training, the employees will return to their respective agencies. Professional training curriculum activities for 1975 include a joint project with the Ohio State Environmental Protection Agency to train high school teachers in monitoring techniques, the development of a curriculum for the land disposal of agricultural wastes, and the analysis of program objectives in the environmental training and engineering field. Undergraduate training grants will be provided for 11 institutions in water related engineering and environmental disciplines to support 104 students.

1976 Plan

In 1976, 425 graduate trainees will be supported at 32 institutions. Professional training curriculum activities will continue in 1976 at a reduced level. The funds will be used to complete a curriculum development grant for land use disposal of agricultural wastes and for development of a plan for graduate training in water quality based on present legislation and water quality goals. Also, funding of a cooperative demonstration program with the Ohio State Environmental Protection Agency, five Ohio universities, the Institute for Environmental Education, and EPA will be continued.

Undergraduate training grants will be funded at the same level as in 1975 with funds being applied to curriculum development and demonstration projects for design and operation of municipal water/waste water facilities and for training to meet NPDES municipal permit requirements.

Purpose of Decrease

The decrease reflects the phased reduction in academic training.

Water Quality

Abatement and Control

Control Agency Support

	1975	1976	Change
Control agency support........	$45,664,300	$34,375,000	-$11,289,300

The water control agency support program provides Federal support to State and interstate water pollution control agencies. In virtually every program activity (e.g.,permitting, monitoring, enforcement, and municipal facilities management), EPA and the States each perform functions which must be coordinated if they are to be effective. EPA develops the strategy for coordination of effort between EPA and the States as well as the sequencing of this effort from year to year. These broad guidelines are translated into operational program terms in the annual program prepared by each State.

Upon approval of the program, EPA funds each State agency to enable it to conduct its program activity. EPA also monitors State performance to ensure that the outputs specified in the program are accomplished.

1975 Program

In 1975, combined State and Federal funding for State programs totals about $130 million, of which $48.5 million is being provided by EPA. In accordance with the policies of the new federalism, we are pursuing a strategy of maximizing State roles. The States are being expected to accept responsibility for increasingly greater shares of the total water quality program, including compliance monitoring of NPDES permits, increased activities in support of the construction grants program, and greater responsibilities for ambient trend monitoring, planning, enforcement, technical support, and training.

1975 Accomplishments

1975 accomplishments and planned outputs include:

- Use of grant resources to support priority program areas including permits, municipal facilities management, compliance monitoring, and planning;
- Issuance of all major municipal permits and virtually all minor permits;
- Increased capacity of State compliance monitoring to strengthen the enforcement of tens of thousands of recently issued permits; and
- Increased capacity of State agencies to manage the construction of municipal facilities.

1976 Plan

In 1976, compliance monitoring and enforcement will receive increased emphasis while permitting activities will decline. The point source control phase of planning will be completed in most basins in 1975 and 1976 will see a beginning of nonpoint source planning. Additionally, a recent EPA draft study reveals a large resource gap in the management of the construction grant program. The study concludes that as many as 2,000 new positions are required to manage this multi-billion dollar program in an effective manner so as to avoid misuse of funds.

EPA manpower resources will be inadequate to undertake all required increased activities in areas of program emphasis. Thus, State programs must respond by shifting personnel to carry out priority activities. Resources will be moved from permitting to compliance monitoring and enforcement. Manpower will be shifted from point source planning to nonpoint source planning. However, additional staffing must be provided to increase State capacity to manage the construction grant program.

Purpose of Decrease

Although State agency grants will be decreased in 1976, support to the States for the 1975-1976 period will be maintained at a funding level of $40.0 million. In addition, $8.5 million in funds added by the Congress to our 1974 budget request has been made available in 1975.

Water Quality

Abatement and Control

Municipal Source Control

	1975	1976	Change
Municipal source control...........	$17,946,400	$18,305,000	+$358,600

The municipal source control program encompasses three interrelated activities: administration of the construction grants, municipal permits/operation and maintenance, and operator and direct training. All of these activities are conducted jointly with the States. All are coordinated and directed toward abating municipal wastewater discharges.

Construction grants administration....	(11,159,300)	(11,493,100)	(+333,800)

This activity encompasses administration of the construction grants program pursuant to EPA's Title II regulations. This includes the technical and administrative review of grant applications, amendments, and supporting materials; facilities plans; construction drawings and specifications; operation and maintenance manuals; user charge and industrial cost recovery systems; and other documents required by the regulations. It also includes awarding of grants, conduct of interim and final construction inspection and preparation of environmental impact statements or negative declarations. This activity does not include the construction grants audit activity which is covered under Agency Management and Support nor does it include any of the postconstruction activities of operation and maintenance inspections or municipal permit compliance assurance inspections and related tasks which are covered by the municipal permits operations and maintenance area. Also, this activity does not include that part of the staffing assigned to the technical review of facilities plans which is covered under technical assistance (water quality planning), nor that part of the staffing assigned to preparing environmental impact statements which is covered under the Agency Management and Support activity. These excluded activities, however, are integral and essential parts of the overall construction grants program.

This activity covers only staffing costs: salaries, benefits, travel, and other personnel related costs. The grant funds are included in a separate appropriations account (Construction Grants) and there are no extramural activity costs funded through contracts. This activity is predominantly located in the regions where all of the grant making and associated administration of the construction grants program reside. The remainder of the activity resides in headquarters in the form of the Municipal Waste Water System Division which provides program policy and oversight.

1975 Program and Accomplishments

During 1975, it is estimated that this activity will administer 4,335 active projects carried over from 1974 (of which 1,560 will be completed during the year) and 3,560 new projects initiated during the year. More specifically, the activity will be managing the following estimated numbers of projects during 1975 as compared to 1974:

Types of Projects	1974	1975
New Step 1 projects..................	560	1,200
New Step 2 projects..................	100	1,100
New Step 3 projects (in preconstruction stage)........................	470	1,260
Active Step 3 projects in construction phase.........................	1,270	1,640
Active Section 8 projects in construction phase.....................	1,935	1,135
Total.............................	4,335	6,335

The new projects will result in estimated obligations of $3.5 billion.

As can be seen in the above table, the apparent 1975 workload increases 46 percent over that of 1974. The actual workload, however, will increase by about 119 percent because of the relatively greater manpower requirements of new Step 1, 2, and 3 projects which increase by 215 percent, as against active Step 3 and Section 8 projects which together, decrease slightly. Against this increased workload, the 1975 budget provides for an increase of nine positions and the Agency has reprogrammed 54 positions from other activities. In addition, the Agency intends to contract out a large portion of the preparation of environmental impact statements.

1976 Plan

In 1976, an additional increase in workload is expected as indicated by the following:

Type of Projects	1975	1976
New Step 1 projects..................	1,200	1,950
New Step 2 projects..................	1,100	1,800
New Step 3 projects (in preconstrution stage).........................	1,260	1,950
Active Step 3 projects in constrution stage........................	1,640	2,600
Active Section 8 projects in construction phase.........................	1,135	235
Total..........................	6,335	8,535

The Agency intends to significantly reorient its operating strategy for the program toward increased delegation of functions to the States. Beginning in 1975, the Agency will authorize and encourage delegation of virtually all functions to those States willing and capable of accepting them. Because the Agency cannot delegate its responsibilities for actual grant making, approval of various documents, and stewardship of grants, these delegations will involve State technical and administrative review of all required documents, with the State certifying as to their adequacy. The Agency will rely on these certifications as the basis for awarding grants, approval documents, and otherwise discharging responsibilities that cannot be delegated. In effect, EPA will be delegating (where States accept such delegation) virtually all of the workload except award of grants, approval of documents, preparation of environmental impact statements, and conduct of final construction inspection. To enable this strategy to work, it is believed that the States will insist on additional funding to cover the added administrative costs of the delegated functions. Accordingly, enactment of the legislation which would allow delegated States to use a small portion of their annual construction grant allotments to defray the administrative costs of delegated functions would be highly desirable.

Purpose of Increase

It is believed that only 15 States will be willing, capable, and ready in 1976 to fully assume and implement the delegations described above. This will reduce EPA's 1976 workload (processing but not total workload) by approximately 30 percent. With a 1975 staffing level of 453 positions (inclusive of Agency reprogramming), a 1976 staffing increase of 107 positions is proposed. Also, it is planned to continue contracting for the preparation of environmental impact statements, with about 38 positions to be saved through this device.

	1975	1976	Change
Municipal permit/ operation and maintenance.....	($3,483,000)	($3,513,500)	(+$30,500)

This activity covers resources which are part of the National Pollution Discharge Elimination System (NPDES) program which is described under the water quality permit program activity under the Enforcement appropriation. These resources provide for the technical review of municipal permit applications and the development of municipal permit conditions. They also provide for compliance inspection of permitees when self-monitoring reports indicate that they are out of compliance and for technical assistance to noncomplying permitees where such assistance is deemed more appropriate than taking some form of enforcement action. Such compliance inspections also serve as operation and maintenance inspections of completed projects required under the construction grants program. All other resources devoted to the municipal permit program to cover administration and enforcement functions and the review of self-monitoring reports are assigned to the water quality permit program and are described in that activity.

1975 Program

During 1975, the program will be principally devoted to completing the issuance of original permits to 2,582 major municipal sources (by the middle of 1975) and to 15,100 minor municipal dischargers by the end of 1975. The reissuance of expired municipal permits and the revision of permits to accomodate changed conditions, new information, or industrial pretreatment requirements will also be accomplished. Finally the review of self-monitoring reports, the conduct of compliance inspections, and follow-up actions with respect to noncompliers will be carried out. Thus work will be shared with the States under delegation of the NPDES program. Fifteen

States have already been delegated responsibility for the program and an additional 15 States could gain the program by the end of 1975.

1975 Accomplishments

- Issue about 2,150 major permits (EPA and States);
- Reissue or revise up to 4,000 permits;
- Conduct approximately 35,000 compliance inspection (EPA and States);
- Issue about 12,200 minor permits (EPA and States); and
- Provide technical assistance to an estimated 140 noncomplying permitees.

1976 Program

During 1976, compliance inspection and follow-up technical assistance to correct noncompliance will be the principal activities of this program. It is estimated that approximately 4,700 permitees (1,100 major and 3,600 minor permitees) will have to be inspected. Technical assistance and nonenforcement follow-up actions to correct noncompliance will be required on at least one third of those inspected.

In addition, the 1976 program will continue to encompass the reissuance or revision of significant numbers of permits (an estimated 520 major and 5,000 minor permits). Revision to accommodate industrial pretreatment requirements and to accommodate effluent data not available in issuing the original conditional permits will comprise the bulk of this effort. Reissuance of permits that expire in 1976 will make up the remainder of the effort.

Purpose of Increase

To provide for the full-year cost of the October 1974 pay raise.

	1975	1976	Change
Operator and direct training...........	($3,304,100)	($3,298,400)	(-$5,700)

This activity encompasses the training and certification of waste treatment plant operators, technicians, and managers and the training of other State and local personnel engaged in water pollution control. Operator training includes funds for development, demonstration grants, State training grants, certification, Section 109(b) training facilities, and administration. Included are grants for schools for operation and maintenance training and grants for laboratory programs for support of the National Pollution Discharge Elimination System (NPDES). Direct training includes the headquarters programs and the programs at the National Training Center at Cincinnati, Ohio.

1975 Program and Accomplishments

The program for 1975 features the development of State manpower and training self-sufficiency. Included are those projects that provide the State or municipality with instructional capability, specialized new methods, skills such as are required under the NPDES, new technology and innovative training projects, and development of certification criteria.

1976 Plan

The program for 1976 will follow along the 1975 outline with increased activity in developing State capability. The curriculum developed with 1975 grants will be widely distributed to any school that has facilities and the desire to promote the programs. State certification programs will be evaluated and testing criteria developed. Administrative costs and grants to minority schools will continue at the same funding level as 1975.

1976 funding for Section 104 (g) (1) in the amount of $650,000 for State and local operator training will stress the development of State manpower development and training capabilities through projects that provide States and municipalities with instructional capability, specialized new methods and skills required under NPDES, or new technology and innovative training programs and projects.

The National Training Center will provide increased emphasis in 1976 on the development of training materials for use by State agencies and training institutions.

Purpose of Decrease

The decrease is related to $200 thousand added by Congress in 1975 on a "one-time" basis, offset by the full-year cost of the October 1974 pay raise.

Water Quality

Abatement and Control

Industrial Source Control

	1975	1976	Change
Industrial source control.........	$8,986,900	$6,999,200	-$1,987,700

Industries discharge a broad range of pollutants into our Nation's waters. In the aggregate, they form the largest and most toxic of all concentrated sources of pollution. On the average, industry discharges about three times the amount of waste that is discharged by all the sewered private residences in the United States and the volume is increasing several times as fast as that of sanitary sewage.

The 1972 Amendments to the Federal Water Pollution Control Act provide for a vigorous attack on industrial water pollution, with deadlines for a number of specific control actions. Guiding the control program are two legislatively mandated goals: (1) existing industries discharging pollutants into the Nation's waters must use the best practicable water pollution control technology currently available by July 1, 1977, and (2) they must employ the best available technology by July 1, 1983.

EPA is publishing effluent limitations guidelines to define the best practicable and best available technologies for various industries. The development of the effluent limitations guidelines takes into account adjustments for several factors, including the cost of pollution control, the age of the industrial facility, the process used, and the environmental impact (other than water quality) of the controls. EPA is also identifying, where possible, pollution control measures for completely eliminating industrial discharges.

In addition, new sources of industrial pollution must use the best available demonstrated technology which is being defined by EPA in the form of standards of performance for various industries. Where practicable, EPA is requiring that there be no discharge of pollutants from new industrial facilities.

EPA is also promulgating pretreatment standards for new sources and proposing regulations on the application of effluent limitations for users of publicly owned treatment works which are subject to pretreatment standards under Section 307(b) of the Act.

1975 Program

Activity for 1975 will focus on the development of industrial waste water limitation guidelines and standards and revisions to them as necessary for meeting the 1977 and 1983 goals and new source requirements. A related activity in support of the NPDES program is to provide technical assistance and training for implementation of industrial standards. Updated and current information is also provided on process technology to control and abate industrially caused water pollution. In addition, a data base is being developed on industrial wasteuse, pollution loads, technology achievements, costs, and other information necessary to assess and correct industrial pollution problems. Finally, assistance will be provided to State water pollution control agencies, other Federal agencies, industry, and other groups in matters concerning industrial waste water discharges.

1975 Accomplishments

- Publication of final regulations for the 19 Group I, Phase II categories;
- Publication of final regulations for nine of the 19 Group II categories (remainder to be published by October 1975);
- Publication of final pretreatment regulations for existing sources for the Group I, Phase I and II categories;
- Publication of proposed pretreatment regulations for existing sources for nine of the 19 Group II categories (remainder to be published by October 1975); and
- Awarding of level of effort contracts for data gathering and evaluation (includes field verification and sampling)--data to be used in annual review of the guidelines.

1976 Plan

- Complete development of industrial waste water effluent limitations guidelines and standards for 1977 and 1983 and new source requirements;
- Development of and promulgation of proposed pre-treatment standards for existing sources for the 19 Group II industrial categories;
- Development of technical information as required resulting from the judicial review of effluent limitations guidelines and new source performance standards;
- Development and analysis of data to be used in the annual review of the effluent limitations guidelines and new source performance standards (the guidelines and standards must be revised every five years); and
- Provision of technical assistance to the Office of General Counsel, the regions, and the States on industrial waste water treatment technology and control.

Purpose of Decrease

The decrease results from a "one-time" 1975 congressional increase of $2,000,000 which is being used to support the promulgation of toxic effluent standards under Section 307 and to cover increasedcosts due to the revision and legal defense of existing effluent guidelines.

Water Quality

Abatement and Control

Nonpoint Source Control

	1975	1976	Change
Nonpoint source control............	$1,617,900	$1,606,700	-$11,200

Nonpoint source pollution is a significant portion of the total water pollution load of the waters of the Nation. For the Nation as a whole, about one-third of water pollution is from nonpoint sources. Such sources include agricultural activities, silvicultural activities such as forestry and logging, mining, urban and rural runoff, construction activities, and salt water intrusion.

The immediate objectives of the nonpoint source control program are to direct, support, and coordinate the regional nonpoint source control pilot program; develop and issue cost effective technical guidelines and information on the best practicable control technologies; develop model State laws and regulations; coordinate point source and nonpoint source control activities; and coordinate programs of other Federal agencies to ensure the greatest reduction of nonpoint source pollution from Federal lands. It is planned for the program, presently in its infancy, to become a fully implemented special source program in 1977-1978. An integrated point/nonpoint source control program is necessary to reach the 1983 goals of the Federal Water Pollution Control Act, as amended.

The regional nonpoint source control pilot program is designed to conserve resources through regional projects directed to specific special source categories. The projects not only accomplish controls in limited areas for the specific source category, but also provide basic technical, legal, and institutional control information for use in control of the sources throughout the Nation. The pilot project information, together with that developed by research, will be published and widely distributed. In those cases where specific guidance is necessary, Section 304(e) documents will be developed and distributed as required by the Act.

An objective of the nonpoint source control program is to extend the point source permits to many sources that presently must be treated as nonpoint sources. This generally involves the extension of permit requirements to small sources not covered in existing point source regulations. This program, presently in the development stage, is directed to the orderly progressive application of the permits to the smaller sources within available resources. Technical assistance is provided to Federal, State, and local agencies with emphasis on permitting and monitoring activities.

1975 Program

During 1975, a number of activities will be continued or initiated. Nonpoint source pilot projects will be fully implemented in all regions. A model State law to manage pollution from silvicultural activities will be developed as part of the continuing program to develop model State laws and regulations. Technical guidelines, information, and reports will also be issued relating to control technologies and cost effective techniques. In addition, coordination with other Federal agencies will be continued in the effort to influence current practices on Federal lands to reduce nonpoint source pollution.

1975 Accomplishments

- Full implementation of 10 regional pilot control projects on mining, irrigation return flows, ground water, silviculture, individual domestic systems, urban runoff, salt water intrusion, agriculture, and oil fields and natural brines;
- Completion of the 45 State Sediment Control Institutes;
- Development of a State model law to manage pollution from silvicultural activities and subsequent submission to the Council of State Governments;
- Development and issuance of five information reports and of one Section 304(e) guidance document;
- Participation in meetings and symposia with other Federal agencies to modify current practices on Federal lands to reduce nonpoint source pollution;
- Completion of statistical data and determination of resource requirements for extending animal waste permits; and

- Initiation of development of cost effective technical guidelines to define best practicable control technologies for mining and construction activities. Guidelines would be implemented by the States [illegible] the management of nonpoint source pollution.

1976 Plan

Implementation of pilot control projects in each of the regions will continue in 1976. The results from these projects will be used to assist in the development of specific Section 304(e) guidance. Cost effective technical guidelines will be developed for mining, construction, and agricultural nonpoint source wastes. In addition, two model laws will be completed for the States to adopt for the control of nonpoint source pollutants. Finally, the coordinating effort within other Federal agencies will be continued to promote installation of best practicable management technologies for the control of nonpoint source pollutants on Federal lands.

Purpose of Decrease

The decrease reflects the reprogramming of one position and associated funds to the administration of construction grants.

96<

Water Quality

Abatement and Control

Ocean Disposal and Spill Prevention

	1975	1976	Change
Ocean disposal and spill prevention..	$5,348,700	$5,320,200	-$28,500

Since enactment of the Marine Protection, Research, and Sanctuaries Act of 1972 (PL 92-532), the previously uncontrolled practice of transporting and dumping wastes in ocean waters is now being regulated. The Ocean Disposal Permit Program was initiated in 1974. Since then, EPA has developed criteria for the evaluation of permit applications, prepared procedural regulations, identified some 110 ocean disposal sites, on an interim basis and issued over 80 permits,

Of the 110 dumpsites identified, 11 are now in active use for dumping of municipal and industrial wastes. Four of these are beyond the edge of the continental shelf. Site surveys are being conducted on four sites at present and additional surveys will be initiated in 1975.

The primary objective of the spill prevention program is to protect water quality through establishment of standards and regulations for toxic and hazardous materials, prevention of oil and other spills, and miniminzing the impact of spills on the environment. This authority is covered under Sections 307 (a) and 311.

Section 311 of the Federal Water Pollution Control Act, as amended, specifies a threefold approach to the control of spills: response, prevention, and enforcement. Essential to implementation of Section 311 is the promulgation of key regulations, development of the National Contingency Plan, establishment of spill response programs, and development of an aggressive spill prevention program. The spill response program is shared with the U.S. Coast Guard and jurisdictional lines between the agencies are drawn geographically between inland (including the Great Lakes) and coastal water. It is EPA's position that the discharger should take action to remove the spilled material; however, if the violator fails to do so, cleanup will be undertaken by EPA and the discharger charged for the cost of removal. To provide efficient and coordinated response actions, national and regional contingency plans are required which delineate procedures, techniques (chemical uses), and responsibilities of the various Federal, State and local authorities.

The prevention program is also divided between EPA and the U.S. Coast Guard, in accordance with facility function, with EPA having responsibility for nontransportation related operations. Initially, the EPA program is being directed at repeat violators and major dischargers.

The enforcement aspect of the program serves as a deterrent to dischargers through assessment of the penalties provided for in the Act. For hazardous substances, the enforcement program will have greater significance because of the severe penalties that can be assessed for discharges of nonremovable hazardous substances. More aggressive field investigation will be required becaused hazardous substances spills are more likely to go undetected than oil.

EPA is also responsible for establishing and revising regulations, standards, and guidelines under Section 311 (hazardous substances) and Section 307 (a) (toxic substances). Lists of these substances must be proposed and standards and regulations proposed and promulgated within the time constraints imposed by Congress and court decisions.

Under Section 307 (a), each toxic material listed must be carefully justified by the preparation of criteria documentation, economic and technical feasibility studies, and development of a defensible statement of basis and purpose, including detailed studies of hydrodynamics, available treatment technology, analytical methodology, ambient water quality criteria, and justification of source categories. Public hearings must be held on all proposed standards.

A similar procedure is required under Section 311 (hazardous substances). While no public hearings are required by law, workshops and symposia are necessary. A list of 370 hazardous substances has been published in an Advance Notice of Proposed Rulemaking. Regulations must designate substances, harmful quantities, and rate of penalty for nonremovable substances. Continued international effort is required, especially with Canada, to ensure compatability of our regulations with other countries.

1975 Program

In the ocean dumping permit program, the major effort will be directed toward the designation of ocean disposal sites and the preparation of environmental impact statements for each site. Efforts will also be made to develop better analytical procedures and to revise the existing criteria for permit application evaluation.

During 1975, the major efforts in the remainder of the program will be to initiate compliance inspections and enforcement actions, review spill prevention control and countermeasure plans, fully implement EPA's oil pollution prevention regulations, revise proposed standards for nine toxic materials, and develop methodologies for rates of penalty and harmful quantity regulation under Section 311. Also, development of draft regulations and definitions of small facilities liabilities will be a vital part of the program.

Accomplishments

Accomplishments and 1975 planned outputs include:

- Studies and designation of two ocean disposal sites;
- Public hearings and workshops to revise ocean disposal criteria;
- Processing of 50 permit applications;
- Full implementation of oil pollution prevention regulation;
- Completion of a draft regulation for preventing spills of hazardous substances from nontransportation related facilities;
- Completion of a major revision of the National Contingency Plan to incorporate removal actions for hazardous substances;
- Completion of a draft regulation for removal of hazardous substances;
- Revision of proposed standards on nine toxic materials;

- Re-proposal of new standards for toxic materials to support standards for proposed rulemaking;
- Introduction of evidence to support standards for proposed rulemaking;
- Publication of advanced notice for new list of toxic materials;
- Publication of final standards for nine listed toxic materials;
- Publication of Advance Notice of Proposed Rulemaking list of Section 311 hazardous substances; and
- Development of methodologies for rates of penalty and harmful quantity regulation, and publication of proposed regulations.

1976 Plan

In 1976, the ocean dumping permit program will continue dumpsite designation studies along with the review of permit applications and using new research data, will propose revised criteria for evaluating ocean dumping permit applications.

During 1976, it will be necessary to prepare evidence, propose standards, conduct public hearings and promulgate regulations for those hazardous substances identified in the Advance Notice published in 1975. For hazardous materials, publication of regulations identifying harmful quanities and rates of penalty will be required. Accomplishments are expected to include:

- Study and designation of six ocean disposal sites;
- Review and evaluate 50 ocean dumping permit applications;
- Proposed revisions of criteria;
- Designation of hazardous substances, harmful quantities, and rates of penalty for nonremoval substances regulations responding to Section 311;
- Proposed standards, public hearings, and promulgation of regulations on toxic substances on the proposed

list; and

- Continuation of international activities to insure compatability of regulations.

Purpose of Decrease

The decrease reflects the reprogramming of six positions and associated funds to Construction Grants.

Water Quality

Abatement and Control

Areawide Waste Treatment Management Grants

	1975	1976	Change
Areawide waste treatment management grants:			
Liquidation of contract authority...	$26,000,000	$65,000,000	+$39,000,000
Contract authority	150,000,000	...	-150,000,000

The Act provides for the establishment of areawide waste treatment management and planning agencies under Section 208. Through Section 208, planning agencies are provided a unique opportunity to plan and manage a comprehensive program based on integrated planning and control over such activites as municipal and industrial waste water, storm and combined sewer runoff, nonpoint source pollutants, and land use as it relates to water quality. These agencies will develop comprehensive plans, examing nonstructural as well as structural alternatives, which will affect the investment of both public and private resources over an extended period of time. They are developed for both metropolitan and those other areas with critical water conditions and water quality control problems. The designated agencies, upon receipt of an acceptable grant application, receive grants for 100 percent of their eligible planning costs.

A management system is developed to carry out the objectives and requirements of the plans. This comprehensive management system in designated areas is expected to be the keystone of efforts for attaining the 1983 goals of the Act as it incorporates all the principal functions of water pollution control planning, construction, and regulation.

1975 Program

During 1975, the number of Agency designations is greatly increasing as States and local communities are able to coordinate and prepare the necessary documentation to permit designations to be made. At the end of 1975, 100-130 designations will have been approved. This will provide for the development of areawide plans for about one-third of all metropolitan areas.

1975 Accomplishments

- Development of management plans by designated agencies; and
- Approved of 100-130 areawide planning agency designations.

1976 Plan

During 1976, the funding for Section 208 grants has been shifted from contract authority to budget authority, and is included in the water quality planning section discussed previously.

Purpose of Change

Funding for liquidation of contract authority will be increased to provide for increased outlays to cover the grant obligations made during 1974 and 1975. 1976 funding for new contract authority has been eliminated.

Water Quality

Enforcement

	1975	1976	Increase or Decrease
Budget Authority			
Water Quality Enforcement....	$24,064,800	$21,293,500	-$2,771,300
End-of-Year Employment			
Water Quality Enforcement....	890	744	-146

Purpose

The water quality enforcement program emphasizes the compliance monitoring, enforcement, and continuing issuance of National Pollutant Discharge Elimination System (NPDES) waste water discharge permits. Other activities include the enforcement actions necessary to achieve compliance with regulations on oil and hazardous material discharge, water supply, ocean dumping, and related requirements of the Act. Most water quality enforcement activities are conducted cooperatively with the States and maximum State assumption of these responsibilities is a primary goal.

The National Pollutant Discharge Elimination System permit program is part of the comprehensive effort initiated by the 1972 Amendments to reduce or eliminate point source pollution from industrial, municipal, commercial, and agricultural facilities. The Act prohibits discharge of pollutants to virtually all waters of the United States unless a permit is issued by EPA or an EPA-approved State program. The permit is the focal point of the tight regulatory system with precise and detailed abatement requirements, streamlined enforcement procedures, and heavy penalties for permit violation.

The permit is the mechanism for imposing on point source dischargers the uniform national effluent limitations and national performance standards which EPA is required to promulgate. These standards, set by the abatement and control function, establish the maximum amounts of various pollutants which can legally be discharged into a water body. If, at a given facility, the established national effluent limits will not reduce pollution enough to meet the ambient water quality standards set by the State or EPA, the permit will impose stricter effluent limitations as necessary to meet the water quality standards. These more stringent effluent limits are set by the permit program in coordination with pollution load allocation activities covered under the abatement and control function.

Permits are issued on condition that their pollutant reductions be accomplished according to given time schedules. Compliance with the limitations and the schedules are assured by review of permittee self-monitoring reports, routine and case preparation facility inspections, conferences with permit violators, issuance of letters and administrative orders, and development and referral of cases to the Justice Department.

The primary objectives for 1976 are (1) to assure, in cooperation with the States, a high degree of compliance by the most significant dischargers with their compliance schedules and final effluent limitations; (2) to pursue full implementation of approved State programs and additional approvals to qualified States; (3) to achieve a high degree of compliance with other non-NPDES water enforcement program responsibilities; (4) to expedite issuance and modification of adjudicated, new source, and power plant permits; and (5) to complete issuance and assure compliance with all other NPDES permits.

1975 Program and Accomplishments

With the issuance of nearly all of the first round of permits in 1975, the first step in the NPDES water quality enforcement program will have been completed. Most significantly, all "major discharger", i.e., 6300 permits will have been issued.

The goal of turning over NPDES authority to all qualified States also is expected to continue to progress significantly this year. Approximately 11 new programs should be approved for a total of 30.

1975 saw the first significant results of the NPDES permit enforcement authorities. While we have found significant voluntary compliance with the permit requirements, we will have issued 800 administrative orders and referred 40 NPDES cases to U.S. Attorneys. These formal actions generally were preceded by informal compliance efforts including telephone calls, letters, and meetings. Most permit violations are being identified through review of a substantial number of self-monitoring reports submitted by permittees.

Implementation of NEPA requirements related to new source permits has been initiated in 1975. This has involved principally the preparation of regulations and guidance for developing impact statements and negative declarations for new source permits in 1976.

Enforcement also began implementation of the Section 316(a) provision for appeal from the thermal effluent limits, holding 20 hearings. Thirty enforcement actions were initiated under Refuse Act and the Marine Protection, Research and Sanctuaries Act.

In addition to permit enforcement activities, we have maintained our continuing program with the Coast Guard and Justice Department in enforcements of oil spill prevention and abatement authorities resulting in approximately 700 referrals to the Coast Guard and 50 referrals to U.S. Attorneys for action on violations.

EPA has also taken enforcement action for violation of the Section 404 prohibition against disposal of dredged or fill material without a Corps of Engineers permit. We will have taken 20 such actions this year.

1976 Plan

The basic change in the water quality enforcement program is the significant increase in compliance monitoring and enforcement resulting from the issuance of a large number of discharge permits and the increased number of other water pollution control requirements now in effect. The primary EPA/State objective for 1976 will be to assure a high degree of compliance with NPDES permits by the most significant or "principal" industrial and municipal dischargers. Principal dischargers include "major dischargers" and any additional large facilities having high potential for violation of water quality standards or who are required to install substantial pollution abatement. Water enforcement resources that were previously dedicated to the enormous task of getting out the initial round of discharge permits will now, to a great extent, be dealing with permit compliance and enforcement. We feel that vigorous and effective enforcement of permit conditions must be established from the outset in order to maintain the integrity of the regulatory permit program. The program will concentrate compliance efforts on those dischargers who have demonstrated or have high potential for significant violations of permit conditions.

During 1976, the water quality enforcement program will:

- Accelerate the development of all State permit programs and approve 10 additional State programs;
- Review all self-monitoring reports, facility compliance schedules and discharge monitoring reports, both for receipt and substantial compliance;
- In participation with States, undertake on-site facility inspections at principal dischargers to review violations identified in permittee self-monitoring reports, to identify and define permit violations not identified in reports;
- Follow-up on violations with letters, telephone calls, conferences, and administrative orders, as appropriate;
- Monitor and enforce appropriate compliance with oil spill prevention requirements; toxic, pre-treatment and marine sanitation standards; and aquaculture and sewage sludge disposal permits;
- Enforce ocean dumping regulations of the Marine Protection, Research and Sanctuaries Act of 1972, review Section 404 dredge spoil disposal site designations for possible disapproval, participate in Section 10 Refuse Act dredge spoil actions; and certify Section 8 applications for SBA loans for installation of pollution control equipment;
- Implement Section 504 of the Federal Water Pollution Control Act, as amended, which provides EPA with emergency power to bring suit where a pollution source presents an imminent and substantial danger to public health and welfare;
- Complete review and adjudication of approximately 100 Section 316 appeals dealing with thermal effluent requirements;
- Prepare approximately 250 cases for permit violation to be referred to the U.S. Attorney;

- In participation with the States, issue or reissue approximately 950 major and 10,000 minor permits. These will be issued to new or modified facilities, to dischargers which had not applied, bad not been issued a permit, or whose permit had expired or required modification; and
- Implement National Environmental Policy Act requirements for new source discharge permits, including preparation of environmental impact statements and negative declarations.

Purpose of Decrease

Completion of the issuance of most initial permits and the increasing number of approved State programs will enable us to make a reduction of 146 positions and $2.8 million. It is expected that significantly less EPA technical support will be needed in 1976 for such tasks as developing permit conditions, reviewing State permit conditions, issuing permits, reviewing industry appeals from application of the effluent guidelines, assisting in State program development, participating in adjudicatory hearings, and supporting administrative and judicial enforcement actions.

Overall administrative support, including application receipt and files maintenance, compliance tracking, data systems support, program management, and public notice and program inquiry review and response, will be maintained during 1976 at approximately the same level as in 1975 since they both support the permitting and the compliance monitoring/enforcement functions.

Water Quality

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Processes and Effects.......	$18,779,700	$19,790,500	+$1,010,800
Control Technology....	27,593,500	25,101,900	- 2,491,600
Total......	46,373,200	44,892,400	- 1,480,800
End-of-Year Employment			
Processes and Effects.......	327	327	...
Control Technology....	261	254	- 7
Total......	588	581	- 7

Purpose

The role of research and development in EPA's water quality program is to provide the scientific information needed to support its standard setting and enforcement activities. To do this, a multifaceted research program has been established. The goals of this program include the development of inexpensive, efficient, and effective wastewater treatment technology for both municipalities and industries; useful and defensible monitoring methods; and criteria for clean, safe, ecologically stable water in various aquatic environments; and the establishment of strategies for control of pollution from spills of oil and hazardous materials and from farming, mining, and construction activities (nonpoint sources). An overall goal is to provide the scientific basis for economical and socially viable environmental management.

Water Quality

Research and Development

Processes and Effects

	1975	1976	Change
Processes and effects.........	$18,779,700	$19,790,500	+$1,010,800

This program includes: (1) the development of criteria for the safe treatment and disposal of wastewaters and sludges and the development of health related criteria for fresh and marine recreational waters; (2) research on the toxicological effects of water pollutants on aquatic organisms; (3) research on the movement, transformation, degradation, accumulation, and fate of water pollutants; and (4) the development of new and improved sampling and analytical methods and instrumentation for measuring water and effluent quality. The toxicological and fates research is directed toward development of water quality standards. The analytical methods and instrumentation development is directed toward providing new and improved techniques for water quality and effluent monitoring and surveillance of standards compliance.

The construction grant program calls for alternative waste treatment management techniques and systems to implement Section 201 of the Federal Water Pollution Control Act, as amended. One such technique is land disposal. However, many State agencies are reluctant to use land for the treatment and disposal of wastewater and sludge because of a lack of precise information on the health hazards associated with such a practice. Research on valid criteria for the safe treatment and disposal of wastewaters and sludges is, therefore, of high priority to EPA's Office of Water and Hazardous Materials.

Furthermore, it is a national goal that water be suitable for recreation by 1983, yet the data base available for development of recreational water quality standards is still deficient. Indeed, it is possible that current standards are too stringent, resulting in unnecessary closing of beaches, excessive chlorination costs, and discharge of chlorinated effluents which are known to be ecologically harmful. Recreational water quality criteria directly impact municipal and industrial effluent standards and ocean dumping regulations.

The importance of developing valid, health related recreational water quality criteria cannot be overemphasized since it affects the multibillion dollar water pollution regulatory program. There is little scientific basis for the currently used microbiological criteria for recreational waters. The National Academy of Sciences has found no basis on which to develop a new criteria. Yet much will be spent on treatment plants and their operation to meet surface water standards based on these old and inadequate criteria.

EPA is conducting research to provide data and information for the establishment of water quality criteria that will provide a sound scientific basis for setting legally defensible standards for public water supplies and industrial purposes. Studies are conducted to determine the effects of physical, chemical, biological, microbiological, pesticidal, and radiological pollutants on water use. In addition, to enable description of the interaction of these pollutants within total aquatic ecosystems, research is conducted to determine movement, transformation and ultimate fate of pollutants in fresh surface, ground, marine and large lake waters. This information is required in order to relate the concentration and form of pollutants to the size, character, composition, and location of their sources and to establish effective water quality standards, treatment, and control requirements. The analytical methods and instrumentation development program is designed to provide new and improved techniques for water quality and effluent monitoring and surveillance of standards compliance. There is also a need to have rapid methods for the detection and enumeration of pathogenic and indicator bacteria and chemicals in drinking, recreational, and other waters.

1975 Program

Efforts have been under way to determine the dispersion of pathogens and toxic chemicals in aerosols from conventional secondary wastewater treatment plants. In 1975, health effects work was expanded to include an epidemiological study on human populations associated with conventional wastewater treatment plants. In addition, studies were initiated to determine the transport and fate in air, water, and soil of pathogens and toxic chemicals produced by application of wastewater and sludge to the land.

The recreational water research program is conducting studies at two New York marine beaches, one "clean", the other relatively polluted, to relate quantitatively the incidence of diseases among swimmers to various microbial indices of pollution.

Emphasis is being given to the study of the acute and chronic toxicological effects of metals, pesticides, and complex effluents on all life stages of aquatic organisms, and on the determination of the pathways of movement and behavior of these materials in multiphase systems. EPA is also developing increased capability to describe the eutrophication process, implement lake restoration techniques, and derive criteria for ocean dumping and ocean outfalls. Finally, work is being done on predictive mathematical models of the fate and effects of pollutants in streams, rivers, estuaries, subsurface water, and lakes.

1975 Accomplishments

- Developed preliminary information on asbestos (asbestiform minerals) types and concentrations in Lake Superior and devised interim procedures for determination of asbestos particle concentration in Duluth, Minnesota, water supply source;

- Completed evaluation of principal sources of natural and man-caused groundwater contamination in the northeastern, northcentral, and southeastern States in order to determine research priorities for pollutant source reduction and control methods for protecting against further groundwater quality degradation;

- Published various reports on fates of pesticides in water, assessment of the impact of nutrients on lake water quality in the eastern United States and on results of Great Lakes Reference Study;

- Completed first year of monitoring of a eutrophic lake following nutrient source reduction by advanced water treatment and developed preliminary mathematical model for the recovery process;

- Determined the effect of closed cycle cooling systems on the quality of aquatic plumes from cooling towers and developed preliminary determination of the behavior of atmospheric plumes from cooling towers;

- Completed reports on research knowledge regarding the Nation's estuaries for the congressionally mandated "National Estuary Report;" and

- Completed analytical methods manual for EPA's ocean disposal permit program.

1976 Plan

Asbestos fiber identification and quantification procedures will be expanded to include tissue analysis. Research and predictive model development will be continued for the determination of the fate of additional pesticides and metallic pollutants. A river basin model will be developed for predicting loading rates from nonpoint sources of pollution. Groundwater pollution problems in additional regions of the United States will be assessed, as will groundwater pollution originating from septic tanks and from irrigation return flow disposal. A design, construction, operation, training, and maintenance handbook for environmentally safe subsurface waste injection will be developed, and alternative methods of environmentally acceptable underground injection techniques will be investigated. A study of nutrient inflow to eastern and mid-continent lakes will be continued and several additional lake restoration techniques will be evaluated, including lake drawdown and nutrient inactivation. Spray cooling and cooling water plume prediction models will be field tested. In the Great Lakes study effort, the combined U.S.-Canada Upper Great Lakes Reference Study report will be completed; a final report on the biological assessment of Lake Erie nutrient control programs will be issued; the predictive mathematical model developed during the IFYGL-Lake Ontario program will undergo verification; and similar predictive models for Saginaw Bay and Lake Huron will be developed.

For the marine program, reports on the fate of microbiological agents originating from ocean outfalls, on the effects of municipal sewage sludge deposition on continental shelf benthos, on biological indices of pollution in estuarine ecosystems, and on the effects of crude oil on Gulf of Mexico salt marsh ecosystems will be completed.

Broad epidemiological studies will be conducted to derive recreational water quality criteria based on scientific health effects data. Extensive studies will be conducted to determine the transport and health effects of contaminants resulting from the application of wastewaters and sludges to the land.

Purpose of Increase

We are requesting an increase of $1.0 million for the health effects program. This increase will support conduct of intensive studies on the health effects of the land application of wastewaters and sludges (spray irrigation, infiltration-percolation, etc.). The possible transport of toxic substances and pathogens (especially virus) from wastewater and sludge to man's food chain and drinking water will be determined. Such studies will require extensive monitoring of waste components and waste breakdown products in air, water, and food and the determination of the effects of such contaminants on man through toxicological and epidemiological studies. Inadequate funding will result in delayed formulation of health related criteria for the safe treatment and disposal of wastewaters and sludges. Such criteria are urgently needed by EPA to formulate regulations for alternative cost effective waste treatment techniques.

Water Quality

Research and Development

Control Technology

	1975	1976	Change
Control technology......	$27,593,500	$25,101,900	-$2,491,600

This activity covers the research, development, and demonstration of new, improved, cost effective technology for the control and treatment of wastewaters and sludges from urban and rural populations and industrial sources, and the prevention, control and management of wastewaters from agriculture, mining, construction, spills,and other sources. For municipal and rural populations, efforts are directed to the development and demonstration of treatment processes and control systems capable of removing organic and other pollutants from sewage, combined sewer overflows (sewage and storm water), and urban stormwater discharges. This research directly supports the Agency's multibillion dollar grant program for construction of publicly owned wastewater treatment works. The industrial water pollution control technology program is aimed towards accelerating improved treatment practices and decreasing the cost of "Best Available Technology" (BAT) treatment. It provides the primary data base for the establishment of economically and technically feasible effluent guidelines and treatment parameters for industrial liquid waste discharge permits. The control technology research program relating to mining, agricultural, and other nonpoint sources includes: development and validation of analytical methods to assess the magnitude and character of these sources and to verify effectiveness of source management procedures under local conditions; demonstration and documentation of the effectiveness, cost, and range of applicability of currently available pollution control or source management options; and the development and demonstration of new, cost effective systems.

1975 Program

The program addressed to municipal-rural technology in 1975 emphasizes development and demonstration of cost-effective methods of sludge processing, soil treatment systems, consolidation of results obtained from completed combined sewer overflow control technology studies, stabilization pond upgrading techniques, and alternate disinfection processes. The $5 million increase mandated by Congress was utilized to accelerate the demonstration of cost-effective sludge management systems, substantially complete the lagoon upgrading program, and provide preliminary design guidelines and criteria for irrigation type soil treatment systems. The industrial control technology research program for 1975 concentrates on demonstration of innovative cost-effective technology required to support the Agency's effluent guidelines. The research activity in nonpoint pollution control is directed to land disposal of animal wastes, reduction of pollution from cropland runoff, abandoned mine pollution control, and control of oil and hazardous materials spills. The nonpoint pollution management program also includes the development of predictive tools to determine the magnitude of runoff problems from nonpoint sources under a wide variation of local conditions.

1975 Accomplishments

- Completed guidelines for application of municipal wastewater effluents and sludges to the land for use of regional offices, municipalities, and design engineers in planning and evaluating control facilities;

- Initiated evaluation of feasibility of joint sludge/refuse processing and utilization, implemented wet oxidation and pyrolysis pilot plant investigations to provide additional sludge processing utilization alternatives and to more effectively utilize on-site energy sources;

- Completed a nationwide characterization and evaluation of impact from urban stormwater and nonsewered urban runoff to provide an improved base for evaluating total urban runoff pollution control alternatives;

- Developed two algae removal processes for upgrading ponds and completed the pilot scale evaluations of three new disinfection processes for activated sludge effluents;

- Completed a national assessment of pollutant discharges from nonpoint sources, including a compilation and evaluation of readily useable methods for estimating discharges from nonpoint sources;

- Developed, in cooperation with USDA, a user's manual describing farm management practices for preventing, or reducing to a minimum, the runoff of fertilizers and pesticides from cropland;
- Published a comprehensive technical manual based upon demonstrated technology for control of pollution from surface coal mines in the eastern United States;
- Conducted a demonstration of a cost-effective closed water cycle system in a semichemical pulp mill;
- Conducted a demonstration of a method to recover the valuable protein from meat packing wastewater effluents; and
- Evaluated the economics of the application of pretreatment toxic and secondary treatment standards on the joint industrial-municipal system of Buffalo, New York.

1976 Plan

Several existing tasks will continue into 1976. The program addressed to municipal-rural technology will continue emphasis on development and demonstration of cost-effective methods of sludge processing, utilization, and disposal; soil treatment systems; alternative disinfection techniques; and consolidation of results obtained from completed combined sewer overflow control technology and stabilization pond upgrading techniques studies. Demonstrations focused on the beneficial utilization of wastewater sludges will include sludge pasteurization, sludge composting, refuse/sludge pyrolysis and wet oxidation, spray irrigation and infiltration-percolation soil treatment systems, and nitrogen control systems. These projects will expand the availability of demonstrated, cost-effective technologies for wastewater management and reduce the cost of treatment. New programs will include initiation of small or full scale evaluation/demonstration projects to scale-up cost effective control technology developed at bench or pilot scale. The areas involved would be storm and combined sewers, advanced waste treatment trains, and technology for small wastewater flows. Also, a report will be prepared on performance and reliability of publicly owned biological wastewater treatment works as a function of operation and maintenance.

In the nonpoint area, cost effective techniques will be studied for predicting and reducing the runoff of pollutants from cropland. Controls for discharges from the mining of ores, minerals, and other nonfuel substances will also be demonstrated. A comprehensive technical manual will be prepared for the control of pollution from abandoned coal mines in the eastern United States. Industrial control technology will concentrate on demonstration of cost effective technology required to support the Agency effluent guidelines for BAT.

New efforts will include projects to verify BAT for recycling of biologically treated paper board wastewaters, demonstration of a closed water cycle on one stream of a steel mill, BAT confirmation on combined refinery/petrochemical plant wastewaters, and textile wastewater abatement by process modification.

Purpose of Decrease

The $2.5 million funding decrease in this program is the net of the "one-time" 1975 congressional increase of $5 million for municipal control technology and a requested 1976 increase of $2.5 million for accelerated nonpoint source management research. The seven position decrease is the net of a 1976 three position increase in the nonpoint program coupled with a 10 position decrease in the municipal program. These 10 positions will be reprogrammed to higher priority programs and greater use will be made of the contract and grant mechanisms to achieve the objectives of the municipal control program.

In the nonpoint source management program, the additional $2.5 million and three positions will serve to accelerate the production of technology required to determine the reduction in pollutant load resulting from application of specific nonpoint control measures, and to evaluate the cost and technical feasibility of such measures. Efforts will also be made to establish limits of reasonable control for nonpoint sources and to establish specific control guidelines to serve as the basis for application of management systems.

Construction Grants

	1975	1976	Increase or Decrease
Contract Authority.	$9,000,000,000	...	-$9,000,000,000
Liquidate Contract Authority.........	1,400,000,000	$500,000,000	-900,000,000

This program provides grants to municipal, intermunicipal, State, and interstate agencies to assist in financing the planning, design, and construction of municipal wastewater treatment facilities. Amounts approved from authorizations for contract authority are allotted to each State on the basis of formulas set forth in the Federal Water Pollution Control Act Amendments of 1972 and subsequent legislation. Within these allotments, grants are awarded on a priority basis for individual projects. Each project is eligible for 75 percent in Federal assistance.

The Federal Water Pollution Control Act Amendments of 1972 substantially altered methods of funding the construction grants program and the methods of providing assistance to individual projects. Under the Amendments, both the percentages of Federal grants and the annual amount of monies authorized and appropriated has been increased in several steps. The current percentage of Federal assistance is 75 percent of total eligible costs. Rather than awarding a grant to the applicant for the Federal share of a project, EPA is authorized to enter into a contractual obligation for payment of the eligible proportional costs of the separate elements of each project. Under this authority, a new three step approach to funding projects has been adopted. The first step is development of the facilities plan which includes a preliminary description of the project, a cost effectiveness analysis, an environmental assessment, an infiltration/inflow analysis, and identification of effluent discharge limitations. The second step is development of design plans and specifications. The third and final step is to fund the actual construction of the treatment work. Grants are made for each of these steps with more than one grant possible during the construction phase. Payments against these contractual obligations will be made to the applicant as all or portions of each of these elements are completed. Under this contractual method of providing financial assistance, EPA is obliged to estimate each year the amount of payments that are required to meet all contractual obligations and to seek appropriations to cover these payments.

1975 Program and 1976 Plan

To implement this method of funding, EPA has allotted a total of $9 billion of contract authority to the States and other jurisdictions during the 1973-1975 period. As prescribed by regulations promulgated pursuant to provisions of the Federal Water Pollution Control Act Amendments of 1972, the allotment of 1973/1974 funds was based on a formula utilizing the needs identified in the 1971 municipal needs survey. The $9,000,000,000 in funds will be allotted in 1975 for 1976. This represents the remaining contract authority authorized by legislation for the 1973-1975 period, recently ordered to be released by the Supreme Court.

Accomplishments

Federal grant assistance for construction of municipal wastewater treatment works has been authorized since 1956. Since that time, through June 30, 1974, $8.2 billion of assistance has been provided for 15,200 projects having a total cost of $20.3 billion. Based on an analysis of actual obligations to date, as well as projected future obligations of contract authority funds, EPA is requesting an appropriation for liquidation of contract authority in the amount of $500 million for 1976.

Water Supply

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control......	$3,036,800	$19,860,900	+$16,824,100
Enforcement....	...	100,000	+ 100,000
Research and Development..	4,762,000	12,364,200	+ 7,602,200
Total......	7,798,800	32,325,100	+ 24,526,300
End-of-Year Employment			
Abatement and Control......	94	175	+81
Enforcement....	...	5	+ 5
Research and Development..	64	75	+11
Total......	158	255	+97

Overview and Strategy

The original statutory authority of the water supply program was granted under the Public Health Service Act and the Interstate Quarantine Regulations. With the passage of the Safe Drinking Water Act (an amendment to the Public Health Service Act) last December, the water supply program was significantly changed. This law provides for the safety of drinking water supplies throughout the United States through the establishment and enforcement of national drinking water regulations. These regulations will be established by the Federal Government and will provide standards which specify the constituent levels required to protect the public health. Furthermore, the Safe Drinking Water Act (P.L. 93-523) provides the mechanism by which States may ensure compliance with these regulations by establishing their own programs with the aid of grants from the Federal Government.

A strong Federal-State cooperative effort is necessary to successfully achieve the objective of the Safe Drinking Water Act. Failure of the States to implement the provisions of the Safe Drinking Water Act would place an additional burden on the Agency's resources for this program, since the Environmental Protection Agency is empowered and directed to take action should an imminent and substantial health hazard develop in drinking water supplies. Therefore, to achieve the objective of the Act, the Agency's water supply program will be working closely with the States in many areas.

The abatement and control and research and development programs are the major EPA programs charged with implementing the Safe Drinking Water Act. The abatement and control program is implementing provisions of this Act by preparing national primary and secondary drinking water regulations, State program regulations, and underground injection control regulations. In addition to establishing regulations, this program will also be involved in carrying out numerous studies and surveys covering carcinogens in major metropolitan drinking water supplies, quantity and quality of rural water supplies, underground injection wells, and means of controlling waste disposal that may pollute underground sources of drinking water. Other mandates of this Act call for an aggressive technical assistance program to assist States in developing their own enforcement programs and other programs involved with the control of underground injection of contaminants. To facilitate these efforts, grants will be made available to States in both 1976 and 1977 to assist in these State programs.

The water supply research and development program will continue to provide research on the effects of water quality on human health, the development of analytical methods for assessing quality of drinking water, and continued development of water treatment methods for undesirable contaminants in water supplies for which current methods are ineffective. With the enactment of the water supply legislation, the research and development program will be recommending maximum contaminant levels in public water supplies; conducting research into underground water supplies with emphasis on injection wells, pesticides and fertilizers from surface discharge and/or disposal; expanding studies concerning carcinogens in drinking water; and conducting surveys and studies on rural water supplies and underground waste disposal.

Other activities which will be undertaken by research and development will be in the areas of water health effects and water supply control technology. The major objective of the water health effects program will be to develop valid criteria for setting water quality standards for drinking purposes. It will also provide for the development of scientific knowledge necessary for establishing standards for organic and microbiological contaminants of drinking water.

The primary purpose of the water supply control technology program is to evaluate, improve, and develop control technology necessary to economically attain the standards developed for drinking and recreational water. This involves both the adaptation of large-scale technology to small water supply systems and the development of new or special technologies.

The water supply enforcement program will be initiated this year. Staff and resources will be used to respond to emergency situations under the authorities granted in Section 1431 of the Safe Drinking Water Act and to provide backup assistance in the establishment of regulations.

Summary of Increases and Decreases

1975 Water Supply Program	$ 7,798,800
Abatement and Control	+$16,824,100
The increase is for development of a viable water supply program in order to meet the mandates of the Safe Drinking Water Act. Resources will be used to develop, maintain, and fund grant programs for underground injection and State program development. Additional resources are also requested for technical assistance in order for EPA to assist the States in developing State programs and underground control programs through the interpretation of the attendant regulations and guidelines; aid in the development and completion of the carcinogen study and rural water survey; provide additional information to States, local utilities, and private organizations on the provisions of the Act; and implement other provisions of the Act.	
Enforcement	+ 100,000
The increase will establish a minimum agency capability for enforcing the mandates of the Safe Drinking Water Act.	
Research and Development	+ 7,602,200
The increase will provide additional resources for health effects research and control technology research.	
1976 Water Supply Program Request	32,325,100

Water Supply
Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control			
Technical Assistance....	$3,036.8	$9,860.9	+$6,824.1
State Program Grants....	...	10,000.0	+10,000.0
Subtotal.............	3,036.8	19,860.9	+16,824.1
Enforcement			
Water Supply Enforcement	...	100.0	+100.0
Research and Development			
Processes and Effects...	3,448.3	9,399.8	+5,951.5
Control Technology......	1,313.7	2,964.4	+1,650.7
Subtotal.............	4,762.0	12,364.2	+7,602.2
Total.............	7,798.8	32,325.1	+24,526.3
End-of-Year Employment			
Abatement and Control			
Technical Assistance....	94	175	+81
State Program Grants....	...	...	...
Subtotal.............	94	175	+81
Enforcement			
Water Supply Enforcement	...	5	+5
Research and Development			
Processes and Effects...	44	52	+8
Control Technology......	20	23	+3
Subtotal.............	64	75	+11
Total.............	158	255	+97

Water Supply

Abatement and Control

	1975	1976	Increase or Decrease
Budget Authority			
Technical assistance...	$3,036,800	$9,860,900	+$6,824,100
State Program Grants.......	...	10,000,000	+10,000,000
Total......	$3,036,800	19,860,900	+16,824,100
End-of-Year Employment			
Technical assistance...	94	175	+81
State Program Grants.......	...	...	...
Total......	94	175	+81

Purpose

The water supply abatement and control program directs the national effort to ensure the safety of the Nation's drinking water. Prior to the enactment of the Safe Drinking Water Act, the major program activity was the annual certification of approximately 700 interstate carriers. With the passage of this legislation, the activities of this program have been expanded to include promulgation of regulations required to protect the public health and welfare; studies and surveys to evaluate various aspects of water supplies; technical assistance to the States, local utilities, and private organizations to assist implementation of the provisions of the Act; and establishment of two grant programs to assist the States in implementing mandates of this Act.

In 1976, program emphasis will be placed on developing a strong Federal-State relationship. Regulations will be established by the Federal government and through these regulations, States will be provided with the mechanism to assure the safety of the Nation's drinking water. To encourage and enable the States to qualify for primary enforcement authority, grant programs have been established. It is expected that most States will be able to accept primary enforcement by mid-1977 when the interim primary drinking water regulations become effective.

Water Supply

Abatement and Control

Technical Assistance

	1975	1976	Change
Technical assistance......	$3,036,800	$9,860,900	+$6,824,100

1975 Program

Technical assistance encompasses the activities required to direct the national effort to assure the safety of the Nation's drinking water. The primary activities for this program under the Safe Drinking Water Act include development of regulations covering primary and secondary drinking water standards, State program and underground injection control; comprehensive studies on organics and underground injection of contaminants; surveys of the quality and quantity of rural water supplies; and dissemination of information to the States, local utilities, and private organizations on the provisions of the Act and the attendant regulations and guidelines.

Previous activities, which will continue, include the annual certification of all drinking water supply systems serving interstate carriers, development and maintenance of a comprehensive inventory of public and Federal recreational facilities water supply systems, and technical assistance to the States to improve water supply systems and programs.

During 1976, technical assistance will continue to develop and promulgate regulations; provide assistance to States, local utilities, and private organizations on provisions of the Act and attendant regulations and guidelines; complete studies and/or surveys on the quality and quantity of rural water supplies, underground injection of pollutants, waste disposal and means of control, and maximum safe levels of contaminants in drinking water; aid in the development of State programs; establish the mechanism for program grants; and aid in the awarding of program grants to eligible States.

1975 Accomplishments

- Certification of 700 interstate carrier water supply

- systems;
- Completion and publication of an inventory of water supply systems serving a resident population;
- Promulgation of the interim primary drinking water regulations;
- Preparation of the interim report on the comprehensive study of carcinogens in drinking water supplies;
- Proposed State program and underground injection regulations;
- Publication of a list of States requiring underground control programs;
- Preparation of the annual report to Congress on the Safe Drinking Water Act;
- Initiation of National Academy of Sciences study on the maximum safe level of contamimants found in drinking water supplies
- Collection of information on existing grant regulations;
- Collection of information needed for determining equitable grant allocation factors;
- Development of a funding formula for public water systems supervision programs;
- Development of a funding formula for underground water source protection programs;
- Publication of proposed State program regulations;
- Publication of proposed underground injection control regulations;
- Development of grant application procedures for underground water source protection grants;
- Development of trant application procedures for public water systems supervision program grants;
- Proposing of draft regulations for both types of grants; and

- Publication of proposed guidelines for grant application procedures and definition of acceptable activities for each type of program.

1976 Plan

- Promulgate State program regulations;
- Promulgate national secondary and underground injection regulations;
- Complete studies of rural water supplies;
- Complete a study and survey of waste disposal and means of control of substances which may endanger underground water supplies;
- Develop a State ADP system;
- Complete the validation of inventories of water supplies serving the traveling public;
- Develop additional standards and guidelines for constituents found in drinking water as research data become available;
- Certify 700 interstate carrier supply systems;
- Review and approve State primacy applications within 90 days of receipt as provided by the law. Provide guidance and assistance to the States on primacy requirements and procedures for submitting applications;
- Review and approve State plans submitted for an underground injection control program. Provide guidance and assistance on State program plan requirements;
- Review and approve applications for 1976 State program grants;
- Review and approve applications for 1976 underground injection control grants;
- Review entire grant program for unexpected problems and develop revised program for 1977;

- Improve information on:
    - * number of public water systems,
    - * cost of conducting a public water systems supervision program, and
    - * cost of conducting an underground water source protection program;
- Revise the funding formula for both types of grants for 1977 as experience dictates;
- Revise grant application procedures for 1977 as experience dictates; and
- Prepare the Annual Report to Congress on the implementation of the Safe Drinking Water Act.

Purpose of Increase

The increase for FY 1976 is to provide funds for the implementation of the Safe Drinking Water Act.

Water Supply

Abatement and Control

State Program Grants

	1975	1976	Change
State primacy grants..	...	$7,500,000	+$7,500,000
Underground injection control grants......	...	2,500,000	+2,500,000
Total.....	...	10,000,000	+10,000,000

1976 Program

Section 1443 of the Safe Drinking Water Act provides a means to strengthen the cooperative relationship between Federal and State agencies by awarding State primacy grants and underground injection control grants in both 1976 and 1977. State primacy grants will be awarded to encourage and enable States to assume primary enforcement responsibilities to carry out public water system supervision programs by the effective date of the primary drinking water regulations. Similarly, underground injection control grants will be awarded to States to help provide the means for them to assume primary enforcement responsibilities for the protection of underground water sources by the effective date of the Underground Injection Control Regulations.

1976 Plan

- Support State primacy programs, and
- Support State underground water source protection (underground injection control) programs.

Purpose of Increase

The increase in 1976 is to provide grant funds for the implementation of the Safe Drinking Water Act.

Water Supply

Enforcement

	1975	1976	Increase or Decrease
Budget Authority			
Water Supply Enforcement..........	...	$100,000	+$100,000
End-of-Year Employment			
Water Supply Enforcement..........	...	5	+5

Purpose

The Safe Drinking Water Act provides that the States are to have primary responsibility for enforcing the drinking water regulations, with Federal authority to be exercised only when States fail to act. The regulations are not enforceable, however, until December 1976. The basic relationship holds for underground injection control programs also.

1976 Plan

The resources provided herein will support such EPA regional enforcement activity as may be required (1) during emergency situations (Sec. 1431); (2) in the implementation of interim regulation of underground injections (Sec. 1424); or (3) with regard to records, monitoring, and inspection requirements (Sec. 1445).

These resources will also support the development of the enforcement elements for regulations and procedures relating to the following:

- Application and approval of programs for State primary enforcement responsibility;
- Quality control and testing procedures to assure compliance with drinking water regulations;
- Public water systems records, reports, monitoring, and information and inspection requirements;

- Variances and exemptions;
- Public notification of failure to comply with drinking water regulations;
- State underground injection control programs; and
- Interim underground injection regulation.

Purpose of Increase

This increase will provide the basis for EPA's water supply enforcement program and will allow us to begin to assist the States in the development of enforcement activities.

Water Supply

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Processes and Effects.........	$3,448,300	$9,399,800	+$5,951,500
Control Technology..........	1,313,700	2,964,400	+1,650,700
Total..........	4,762,000	12,364,200	+7,602,200
End-of-Year Employment			
Processes and Effects.........	44	52	+8
Control Technology..........	20	23	+3
Total..........	64	75	+11

Purpose

The water supply processes and effects program provides for research on the effects of water quality on human health and the development of analytical methods for assessing the quality of drinking water. The major objective of the water health effects program is to develop valid criteria for setting water quality standards for drinking water. This program will also provide for development of scientific knowledge necessary for establishing standards for organic, inorganic, and microbiological contaminants of drinking water.

The primary purpose of the water supply control technology program is to evaluate, improve, and develop new control technology necessary to economically attain the standards for drinking water. Attainment of this goal involves both the adaptation of large-scale technology to small water supply systems and the development of new or special technologies.

Water Supply

Research and Development

Processes and Effects

	1975	1976	Change
Processes and effects........	$3,448,300	$9,399,800	+$5,951,500

It is the intent of EPA to issue drinking water standards or guidelines. Valid health effects data need to be developed if these standards are to protect the public health without being unnecessarily stringent.

1975 Program

The scientific basis of the proposed EPA drinking water standards for organics, lead, manganese, cadmium, nitrate, barium, and arsenic will be strengthened. Health effects data will be generated for contaminants that are not on the proposed drinking water standards list but are of potential health significance (asbestos, silicate, selenium, molybdenum, antimony). Research will be initiated to determine the suitability of reusing highly treated municipal or industrial effluents as a water supply source. A sensitive analytical method will be developed for benzidene and development of techniques for asbestos will be pursued.

1975 Accomplishments

- Studies are in progress on acute toxicity of organic compounds concentrated from tap water by semipermeable membrane processes;

- Additional health effects data have been provided related to the nitrate problem in drinking water. Based on the information, it is recommended that the standard for nitrate not be raised above its present level;

- A report was completed on virus occurrences in 10 water supply systems; and

- A survey to determine the nature and concentration of organic compounds in drinking water has been initiated for a variety of water supplies. A method for benzidene will be available by the end of the fiscal year.

1976 Plan

Many toxic and carcinogenic substances are of concern at concentration levels below one part per billion, requiring an increase in sensitivity of the methods now being applied. To meet these requirements, special concentration and separation techniques must be developed. The present methodology for organics is applicable to volatile compounds only, thus detecting only about 2 percent of the total organic content. An increased effort to develop methods for nonvolatile organics will be undertaken. Procedures for the identification of the sources of water supply contaminants will be developed.

There will be an increased effort in the development of virus detection methods and rapid instrumental methods for detection of toxic elements.

To carry through and complement current program objectives in 1976, EPA intends to continue or initiate studies to determine the health effects of organics, tin, manganese, cadmium, arsenic, selenium, barium, molybdenum, antimony, nitrates, and asbestos. The Agency also believes it will be necessary to expand significantly the water supply health effects research program in the area of organics.

Ecological processes and effects studies will be undertaken to determine the extent and nature of groundwater contamination stemming from abandoned extraction and injection wells, intensive application of pesticides and fertilizers, and the surface disposal of contaminants in underground water recharge areas.

Purpose of Increase

A total increase of $5,951,500 and eight positions is requested: $500,000 to support studies of the health effects of wastewater reuse, and $5,451,500 and eight positions for research in direct support of the Safe Drinking Water Act.

An increase in the ecological processes and effects program will be used to study the nature and extent of the impact on underground water of: (1) abandoned injection or extraction wells; (2) intensive application of pesticides and fertilizers; and (3) surface disposal of contaminants in water recharge areas. Research also will be conducted to determine methods of protecting underground drinking water sources. Studies will evaluate the formation pressure increases attributable to underground injection, develop a model capable of predicting and estimating the impact of such increases, and determine the effects of pressure increases on waste migration.

Increased effort in the water monitoring program will aim at the development of practical techniques for the identification, measurement, and determination of sources of contaminants (particularly organic substances and viral agents) in drinking water. The techniques will be designed for use by State and local public health officials charged with responsibility for safeguarding public drinking water supplies.

Defensible health effects data will be developed for organic, inorganic, and microbiological contaminants of drinking water through the conduct of short and long term toxicological studies and through comparative epidemiological studies of populations exposed to high and low levels of contaminants.

Water Supply

Research and Development

Control Technology

	1975	1976	Change
Control technology.....	$1,313,700	$2,964,400	+$1,650,700

Passage of the Safe Drinking Water Act requires EPA to issue drinking water standards. Clearly, standards cannot be proposed where adequate methods of control are lacking.

1975 Program

The water supply control technology program is developing technology for the removal and/or inactivation of the following contaminants: organics, arsenic, asbestos, barium, mercury, nitrates, cadmium, chromium, lead, radium, selenium, turbidity, bacteria, and virus. Water treatment methods are being developed to prevent deterioration of water quality during storage and distribution of drinking water (e.g., prevention of bacterial regrowth in water supply conduits and prevention of lead dissolution from old lead pipings). The amount of asbestos leached from asbestos-cement pipes will be determined.

1975 Accomplishments

- Tests were completed on effectiveness of copper sulfate and potassium permanganate for disinfecting newly installed water mains--neither of which were found to be as effective as chlorine;

- Tests have been completed demonstrating that arsenic and selenium are removed effectively in the oxidized or reduced state using the process of reverse osmosis. Reverse osmosis thus may be a successful concentration technique to remove these contaminants effectively and economically;

- It has been shown that ozone alters organic compounds but the oxidation is not necessarily completed to carbon dioxide and water--this implies possible new toxicity problems;

- Pilot plant studies have been completed showing good removal of methyl mercury with either virgin or exhausted granular activated carbons; and
- Asbestos-like fibers are being removed from the Duluth, Minnesota, water supply in a pilot facility using granular media filtration and diatomaceous earth filtration.

1976 Plan

EPA is planning to continue or to initiate studies for removal and/or inactivation of cadmium, chromium, lead, asbestos, nitrate, radium, organic compounds, bacteria and viruses. We also feel that alternate methods of chlorine disinfection should be thoroughly studied in this next fiscal year. As a continuation of the 1975 program, the Agency intends to determine how to prevent water quality deterioration during distribution of drinking water. Technology that is applicable to small water supply systems will be emphasized.

Purpose of Increase

An increase of $1,650,700 and three positions is requested to provide additional research efforts in support of the Safe Drinking Water Act requirements. A substantial effort will be aimed at controlling organic contaminants in drinking water. The mechanism of formation of halogenated organics through normal disinfection practices will be determined and methods of control will be developed. Alternate methods to chlorine disinfection will be thoroughly investigated. Candidate disinfectants are ozone and ultra violet light.

Solid Wastes

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control.......	$10,332,000	$11,622,700	+$1,290,700
Research and Development...	9,196,500	3,997,300	- 5,199,200
Total......	19,528,500	15,620,000	- 3,908,500
End-of-Year Employment			
Abatement and Control.......	151	161	+10
Research and Development...	23	23	...
Total......	174	184	+10

Overview and Strategy

Solid wastes management presents a spectrum of problems, from health and environmental hazards to waste management inefficiency, due to diversity in the nature of the waste' sources and composition. The basic problem, however, is improper wastes disposal which causes adverse environmental and economic consequences such as ground and surface water pollution, air pollution, aesthetic problems associated with uncontrolled dumping, decreased land values, and resource wastage.

Over four billion tons of waste are generated in the United States every year, of which over 10 million tons are hazardous--that is to say toxic, flammable, radioactive, explosive, or infectious. As these wastes represent a potential threat to human health and safety, they require special control through chemical transformation, detoxification, recovery or, if such steps are impossible, by deposition on land.

Potential health and environmental effects vary considerably for the remainder of the wastes such as sewage sludge, abandoned cars, municipal solid wastes, waste oil, rubber tires, wastes from confined animal feeding operations, and infectious hospital wastes. These effects depend upon the waste volume, composition, and concentration.

A principal problem from disposal sites is the generation of leachate--water that has soaked through and absorbed soluble or biological agents from the deposited waste. Where high rainfall and high water tables coexist (9,000-12,000 disposal sites are located in these areas), groundwater contamination may occur.

Resource conservation and recovery presents an alternative to disposal and can usually be achieved at a lower cost. The potential exists to recover, from mixed municipal waste, seven percent of the annual national iron consumption, eight percent of aluminum, five percent of copper, three percent of lead, 19 percent of tin, and 14 percent of paper. The tonnages these figures represent for aluminum and tin are greater than all domestic production of the raw materials.

The basic legislative authority for the solid wastes program is the Solid Waste Disposal Act, as amended. The program has two strategic goals: to achieve acceptable and safe waste management that will protect public health and welfare and the environment and to conserve resources. The basic tools the solid wastes program employs are (1) stimulation of regulatory action at the State and local level through the use of guidelines and recommended procedures; (2) research, development, and demonstrations aimed at greater understanding of the problems of solid waste disposal, development of improved disposal and recovery methods, and demonstrations of advanced technology; and (3) technical assistance to facilitate project development.

Summary of Increases and Decreases

1975 Solid Wastes Program.................	$19,528,500
Abatement and Control...................	+ 1,290,700
An increase to do material and source definitions, effects identification and technology assessment work necessary to develop Section 209 guidelines for the disposal, storage, treatment, and transport of hazardous and other wastes.	
Research and Development................	- 5,199,200
A reduction resulting from $5.2 million added by the Congress in 1975 not being required in 1976.	
1976 Solid Wastes Program Request.........	15,620,000

Solid Wastes

Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control			
Technical Assistance.....	$10,332.0	$11,622.7	+$1,290.7
Research and Development			
Processes and Effects....	351.9	352.0	+.1
Control Technology.......	8,844.6	3,645.3	-5,199.3
Subtotal............	9,196.5	3,997.3	-5,199.2
Total............	19,528.5	15,620.0	-3,908.5
End-of-Year Employment			
Abatement and Control			
Technical Assistance.....	151	161	+10
Research and Development			
Processes and Effects....	3	3	...
Control Technology.......	20	20	...
Subtotal............	23	23	...
Total............	174	184	+10

Solid Wastes

Abatement and Control

	1975	1976	Increase or Decrease
Budget Authority			
Technical Assistance....	$10,332,000	$11,622,700	+$1,290,700
Total......	10,332,000	11,622,700	+ 1,290,700
End-of-Year Employment			
Technical Assistance....	151	161	+10
Total......	151	161	+10

Purpose

Under the solid wastes abatement and control program, EPA provides support to State and local governments through information dissemination, technical assistance, and guideline promulgation which draws upon past and current research, studies, and demonstrations. The program also performs a monitoring and compliance function for Federal facility activity. EPA considers the achievement of effective solid waste management to be a joint Federal, State and local effort with the EPA focusing on areas of waste management problems having a significant impact in terms of national implications (e.g., hazardous waste disposal, disposal of sludges resulting from air and water pollution control, demonstration of resource recovery technology) and State efforts directed towards the local management of municipal and other types of wastes.

The purpose of this program is to illustrate and encourage the use of the most advanced practices in solid waste management and technology. This is accomplished by stimulating at the State and local levels institutional changes which optimize disposal and resource conservation practices. In 1975-1976, program emphasis will be placed on development of State level programs for dealing with disposal of toxic and hazardous wastes.

Solid Wastes

Abatement and Control

Technical Assistance

	1975	1976	Change
Technical assistance......	$10,332,000	$11,622,700	+$1,290,700

Technical assistance is provided to other Federal agenices, States, and localities with the objective of improving environmental performance while significantly lowering total solid wastes management costs. Technical assistance includes extensive efforts in working with cities to solve problems, providing technical information, and performing analyses to determine appropriate ways to resolve various solid wastes management problems. EPA issues solid wastes management guidelines (Section 209 of the Solid Waste Disposal Act) which Federal agencies will be required to meet and which will be recommended for public use.

The hazardous waste program activities in 1975-1976 focus on problem characterization which includes materials and source definitions, effects identification, and technology assessment. These actions will lead to guideline standards being promulgated in 1977 and 1978. Some effort will be directed toward working with States and providing emergency response-type technical assistance.

The 13 major industries which generate 75 percent of the total 10 million tons of hazardous wastes that are primarily sludges containing various metal, organics, and inorganics of toxic nature, are the focal point of program efforts. This effort includes comprehensive assessments of these industries which, upon completion, will present total waste profiles for the industries, identify the actual disposal methods now used, and provide a qualitative and economic assessment of those methods.

Technology assessment work is directed toward three major activity areas: incineration of organic hazardous wastes (with and without energy recovery); land disposal of hazardous wastes in highly controlled chemical waste landfills; and treatment of wastes (ion exchange, neutralization, chelation, etc.). As 60 percent of the hazardous wastes are organic and can be burned, incineration has been selected as the first priority activity; second priority is placed on the remaining 40 percent of the wastes, which are inorganic, and must be either treated or placed on land. Each is a multi-year demonstration and assessment effort, both from a funding and performance standpoint. All of these activities will culminate in 1977-1978 and result in a revision of Section 209 guidelines which will include information on incineration, landfill, treatment, recycling, and tranport of hazardous wastes.

Section 209 of the Solid Waste Disposal Act requires that EPA publish in the Federal Register guidelines for solid waste recovery, collection, separation, and disposal (including private as well as public sector systems). To date EPA has published three guidelines: Land Disposal, Thermal Processing, and Disposal and Storage of Pesticides. Five guidelines will be promulgated in 1976; one in waste collection and four in resource recovery--separation, resource recovery facilities, procurement of recycled material, and beverage containers.

Work on other wastes will include an assessment of the effects and characteristics of leachate from disposal sites, assessment of sewage sludge disposal methods, and provision of limited technical assistance.

Investigatory work on describing the effects of leachate from disposal sites will be undertaken in 1975 and 1976. This work will include technology assessment and will result in revised Section 209 guidelines for land disposal, incorporating leachate groundwater protection procedures, in 1978. Control of leachate may be possible in two ways: through the use of the natural treatment characteristics of soils or through collection of leachate (e.g., by lining land disposal sites with natural or artifical membranes and by using drainage pipes) with subsequent treatment. Four methods for leachate treatment have been identified for assessment; two methods will be initiated in 1975 and two in 1976. Completion of these projects in 1978 will then be followed by preparation of a technical document on the basis of which guideline revisions will be made.

Sewage sludge is the chief residual of sewage treatment activities and currently occurs at the rate of about seven million tons dryweight yearly. Sludges are disposed of in a variety of ways--by incineration, land spreading, in sludge-only landfills, and in combination with municipal solid wastes in sanitary landfills and dumps. The principal tasks leading to a sludge disposal guideline in 1977 are assessment of current practices, assessment of the heavy metals problem associated with sludges (which dictates the type of control on land or underground), and assessment of the adequacy of current methods of disposal.

Other areas of solid waste management now undergoing state-of-the-art studies include disposal or recovery of waste oil, tires, and other products that may be salvaged from mixed municipal solid waste. Once these studies are completed (late 1975) decisions will be made as to whether or not Section 209 guidelines will be prepared.

In resource recovery, technical assistance efforts are directed toward stimulation of energy recovery system implementation. Accelerating fuel costs have made energy recovery from waste a sound solid waste option. Implementation is impeded largely by institutional constraints (e.g., lack of knowledge, resistance to enter into long-term contracts) that can be solved by technical assistance. These efforts will result in community adoption of resource recovery systems in new areas.

1975 Program and Accomplishments

- Characterize hazardous waste amounts and sources for nine industries;
- Publish two documents emphasizing tranport mechanism and health effects of land disposal of wastes containing mercury and asbestos;
- Prepare an interim assessment indicating the adverse effects of leachate from landfill;
- Propose guidelines (Section 209) for collection, beverage containers, Federal procurement, source separation and separate collection, and recovery from mixed municipal wastes;
- Revise the Decision Makers Guide in solid wastes management to improve local decisions--incorporating additional chapters on balefields and landfill liners;
- Complete evaluation of the Franklin, Ohio, resource recovery technology demonstration;

- Evaluate sludge nutrients to determine their value as fertilizer;
- Assess the technology of methane gas recovery at landfills;
- Assess the impact of export controls on secondary materials recovery;
- Complete an environmental assessment comparing paper recovery for material value vs. paper recovery for fuel value;
- Complete a cost benefit assessment of separate collection; and
- Complete an annual report to Congress on resource conservation (Section 205).

1976 Plan

- Define hazardous wastes generated by four other industries;
- Assess damages and costs associated with the disposal of hazardous wastes;
- Complete an in-depth assessment of five land disposal sites to determine the characteristics of leachate, attenuation, and flow;
- Publish documents on the transport and health effects of wastes disposed of on land containing cadmium, chromium, lead, polychlorinated biphenyl, beryllium, selenium, and cyanides;
- Evaluate pollution from subsurface sludge disposal;
- Assess two technology options for treatment of leachate;
- Finalize Section 209 guidelines for collection and resource recovery;
- Complete evaluations of Baltimore, San Diego and Lowell resource recovery technology demonstrations; and

- Complete the annual report to Congress on resource conservation (Section 205).

Purpose of Increase

The increase for technical assistance will be directed toward the development of a hazardous and other wastes data base program which includes (1) an assessment of chemicals and waste streams as an evidentiary base for guidelines setting; (2) quantification of the waste disposal problem; (3) technology assessment, development, and demonstration; and (4) the necessary benefit/cost tradeoff analyses for guidelines setting justification.

Solid Waste

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Processes and Effects..	$351,900	$352,000	+$100
Control Technology.....	8,844,600	3,645,300	-5,199,300
Total...........	9,196,500	3,997,300	-5,199,200
End-of-Year Employment			
Processes and Effects..	3	3	...
Control Technology.....	20	20	...
Total...........	23	23	...

Purpose

EPA's research and development efforts in the solid waste program are directed toward the development of improved solid waste management, disposal technology, and resource recovery technology. These technological advances will enable local agencies to handle their solid waste problems in an effective and economical manner. In addition, the program is expanding efforts to develop the scientific base for the establishment of standards for hazardous wastes disposal. In particular, information on the fate and processes of such materials in groundwater systems is being developed and formulated into criteria documents.

Solid Waste

Research and Development

Processes and Effects

	1975	1976	Change
Processes and effects...........	$351,900	$352,000	+$100

This program encompasses identification and evaluation of potentially toxic and pathogenic products of solid wastes incineration, landfilling and recycling operations, and the assessment of their public health impact. Investigation of the pathogenic contamination of solid waste incineration and the movement of viruses and pathogens from disposal sites will lay the scientific foundation for the development of standards to protect the public health.

The program also involves the evaluation of deep well disposal of toxic materials, the study of groundwater contamination from sanitary landfill operations, and the study of the fate, in soils and groundwaters, of heavy metals and other hazardous materials from sludge and industrial waste by-products.

1975 Program

- The 1975 objectives of this program include: A study on the migration of hazardous materials from land disposal sites; determination of quality and quantity of leachate and gas from sanitary landfills; publication of health effects data on specific hazardous materials (i.e., metals); and an analysis of ecological effects of sanitary landfills.

1975 Accomplishments

- Provided assessments and interpretations of effects data and initiated effects research on an expanded list of substances including arsenic, asbestos, beryllium, cadmium, chromium, copper, cyanides, lead, mercury, selenium, zinc, aldrin/dieldrin, benzidine, DDD/DDE/DDT, endrin, polychlorinated biphenyls, and toxaphene. These assessments provide the basis for scientific criteria documents for Office of Solid Waste regulatory decision making;

- Conducted transport process investigations on the migration of hazardous materials through soils. A research seminar at Rutgers University this fiscal year will disseminate results;

- Completed a major portion of the research on the environmental effects of sanitary landfill effluents;

- Investigated the movement and retention, transformation, and volatilization of pesticides, polychlorinated biphyenyls and hexachlorabenzene in soils. Criteria for safe disposal by thermal destruction have been developed for some pesticides;

- Investigated the retention of hazardous substances by soils from electroplating, chlorine production, nickel-cadmium battery production, inorganic pigment manufacturing, and water-based paint production in industrial waste streams; and

- Assessed environmental effects of current disposal practices for polyvinyl chlorides.

1976 Plan

- The 1976 plan provides for continued assessment and interpretations of effects data to support disposal standards setting by responsible State and local authorities. There will be continuing investigation of the environmental protection afforded by landfill liners, encapsulation, chemical fixation of hazardous wastes, and other control techniques. Also, a continuation will be made of investigations on effects of disposal of infectious and health care facility wastes. Finally, a continuing investigation will be conducted on transport mechanisms of hazardous waste disposal. Plans also include studies of soil retention of hazardous waste substances for up to 28 additional waste streams.

Solid Waste

Research and Development

Control Technology

	1975	1976	Change
Control technology....	$8,844,600	$3,645,300	-$5,199,300

This program involves the development of control techniques and technology for the safe disposal of toxic and hazardous solid wastes. The effort supports the setting of meaningful and comprehensive standards and regulations by the authorities responsible, and will provide the means for evaluating and fostering improvement of disposal practices for toxic and hazardous solid wastes. Initial emphasis will center on disposal techniques for materials exhibiting known hazardous effects. To a lesser extent, resource recovery and municipal solid waste disposal technologies, including studies of the combustion of solid waste to produce energy, will be developed and evaluated.

1975 Program

- The objectives of the 1975 program include the generation of a cost analysis of disposal methods of selected hazardous materials and development of a report on the economic analysis of solid and hazardous waste handling. Also included in the program is an update of new acceptable techniques for recovery/disposal of hazardous wastes. Technical assistance is being provided for improvement of existing methods for disposal of municipal refuse and hazardous wastes. Finally, a determination is being made of the feasibility of conversion of solid waste into energy and reuseable products.

1975 Accomplishments

- Conducted experimental incineration studies to establish time-temperature relationships for acceptable decomposition of various pesticides;

- Conducted investigations of chemical treatment and degradation methods for pesticides, including the establishment of safe procedures for using caustic soda, hypochlorite, peroxides, and acids;

- Investigated new hazardous waste treatment technologies including chlorinolysis, wet air oxidation, decomposition by acids and bases, chemical oxidation, biological degradation, ion exchange, photochemical, low temperature microwave discharge, osmosis/ultrafiltration, and activated carbon absorption;

- Initiated an evaluation of unit processes for resource recovery. Results may be used by municipalities contemplating the use of resource recovery technology;

- Conduct a test program to evaluate promising organic and inorganic processes for fixing and coating pesticides, soluble organics, and heavy oil residues. Samples of various toxic wastes fixed by various techniques will undergo long-term field and laboratory testing;

- Conducted a test program to evaluate landfill liners of clay, cement, asphalt, and plastic membranes to test resistance to acids, bases, solvents and physical impact. Results will provide criteria for safe disposal of various classes of wastes, both hazardous and non-hazardous; and

- Completed test of CPU-400 energy recovery system, using "dry scrubber" filter system to attempt to solve problems of alumina deposition on turbine wheel.

1976 Plan

- Objectives for 1976 include preparation of a field manual for use by farmers and home owners on safe disposal of pesticides, and evaluations of several commercial chemical fixation processes and several processes developed by the Corps of Engineers.

- Efforts will continue to develop and evaluate new technologies for safer disposal of hazardous wastes.

- A primary objective in the field of energy conservation will be to investigate energy and fuel recovery processes to obtain valuable methane, alcohol, and other materials from waste products.

Purpose of Decrease

The decrease of $5.2 million reflects the impact of the one-time FY 1975 Congressional increase for research on energy recovery through combustion of solid wastes.

Pesticides

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control........	$19,521,900	$29,552,100	+$10,030,200
Enforcement......	3,408,500	3,582,900	+174,400
Research and Development....	11,193,000	11,197,900	+4,900
Total.......	34,123,400	44,332,900	+10,209,500
End-of-Year Employment			
Abatement and Control........	671	671	...
Enforcement......	153	153	...
Research and Development....	148	148	...
Total.......	972	972	...

Overview and Strategy

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), amended in 1972, gives the Environmental Protection Agency broad new responsibilities and authorities to protect man and his environment from the adverse effects of chemical pesticides. It places many new responsibilities on States and calls for extensive cooperative efforts not previously required. The new Act continues EPA's responsibilities under the 1947 FIFRA and adds new areas of control of the routes by which almost all pesticides reach the environment. The full implementation of the Act by October 1976 dictates four major approaches over the next two years.

1. EPA must reregister and classify over 30,000 interstate and 15,000 intrastate previously registered products for "general" or "restricted" use. This calls for action based on assessment of the unreasonable adverse effects of pesticides including the costs and benefits of their uses.

2. EPA now has the authority to insure control of local health and environmental problems arising from misuse of

pesticides. This will be accomplished by requiring that applicators of potentially hazardous pesticides be properly certified; by improved labeling and packaging; by imposing regulatory restrictions as needed; by applicator training and public education; and by timely enforcement.

3. EPA will undertake a comprehensive hazard evaluation system to better understand the nature and extent of adverse effects of pesticides on man and the environment.

4. EPA is conducting near-term research studies in ecological and human health effects for hazard evaluation and in the development of alternative pest control techniques.

While these four major approaches are being implemented, EPA will develop a long-term strategy for the period commencing in 1977. This strategy design will be based on the experience gained in administering pesticide supply and use control programs, in improving evaluation of pesticide hazards, and from new knowledge gained from research and special scientific studies.

About one billion pounds of pesticide active ingredients are used each year in the United States, over 50 percent by the agricultural sector and 30 percent by industrial and institutional users. It is important, therefore, that any action regulating pesticide use be based on careful assessment of its effects on the activities in the sector of use.

Because of the acknowledged benefits from pesticides, they have now become increasingly important to agricultural production, to public health and sanitation and to protection of capital investments and natural resources, as well as to the improvement of human well-being. There are, however, adverse pesticide impacts. Impacts on human beings are the most important and include large numbers of non-fatal poisonings, a significant portion of which require hospitalization. (For the most part the principal causes of these poisonings are poor application techniques, lack of protective clothing, faulty equipment, and failure to read, understand, or heed label instructions.) Environmental impacts are not easy to assess due to the complexity of pesticide movements in an ecosystem, but improper use or disposal of pesticides often results in wildlife or domestic animal poisonings.

Immediate operational objectives and tactics are based on four specific strategic approaches:

1. Supply control, to keep highly hazardous chemicals off the market through the registration process and through labeling, classification, and other regulatory restrictions.

2. Use control to restrict the use of pesticides classified for "restricted use" to certified applicators; to improve label directions for safe use; to educate the consuming public in proper use of pesticides; and to take civil or criminal enforcement measures when necessary.

3. Hazard evaluation, to conduct human effect monitoring, ambient residue monitoring, and accident surveillance which serve to alert EPA and provide supporting data for administrative actions to remove from the market registered products whose use causes unreasonable adverse effects.

4. Research and special studies, to develop data and analytical techniques, to discover unknown hazards of pesticides, and to gain knowledge on the behavior of pesticides and their effects on human health and ecosystems.

Summary of Increases and Decreases

1975 Pesticides Program	$34,123,400
Abatement and Control	+10,030,200
The increase will support: reregistration and classification of an estimated 22,000 interstate and intrastate products and to meet the effective date (October 1976) of the FIFRA; development of cooperative programs with States for implementation of applicator certification and training programs; $1.8 million to provide grant and contract support for State development and implementation of applicator certification and $7.2 million to provide grant and contract support to States including cooperative state extension services for the implementation of applicator training programs.	
Enforcement	+174,400
The increase will support the full year costs of the October 1974 pay raise.	
Research and Development	+4,900
This increase is required for a minor adjustment in personnel compensation and benefits.	
1976 Pesticides Program Request	44,332,900

Pesticides

Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control			
Registrations and Tolerances.	$7,654.2	$8,114.2	+$460.0
Monitoring...................	4,543.2	4,564.5	+21.3
Technical Assistance.........	7,324.5	16,873.4	+9,548.9
Subtotal..................	19,521.9	29,552.1	+10,030.2
Enforcement			
Pesticides Enforcement.......	3,408.5	3,582.9	+174.4
Research and Development			
Processes and Effects........	11,193.0	11,197.9	+4.9
Total..................	34,123.4	44,332.9	+10,209.5
End-of-Year Employment			
Abatement and Control			
Registrations and Tolerances.	407	407	...
Monitoring...................	80	80	...
Technical Assistance.........	184	184	...
Subtotal..................	671	671	...
Enforcement			
Pesticides Enforcement.......	153	153	...
Research and Development			
Processes and Effects........	148	148	...
Total..................	972	972	...

NOTE: Registrations and tolerances manpower includes 51 positions formerly carried against the Revolving Fund for tolerance petitions. Labor costs for processing fee bearing tolerance petitions will continue to be charged against Revolving Fund receipts.

Pesticides

Abatement and Control

	1975	1976	Increase or Decrease
Budget Authority			
Registration and Tolerances.......	$7,654,200	$8,114,200	+$460,000
Monitoring........	4,543,200	4,564,500	+21,300
Technical Assistance............	7,324,500	16,873,400	+9,548,900
Total...........	19,521,900	29,552,100	+10,030,200
End-of-Year Employment			
Registration and Tolerances.......	407	407	...
Monitoring........	80	80	...
Technical Assistance...........	184	184	...
Total..........	671	671	...

Purpose

EPA's pesticide abatement and control program plays a major role in the pursuit of the Agency's total pesticide control strategy. Registration and tolerance activities support the supply control strategy by requiring all pesticide products to be registered. Review of registration applications and their supporting data allows EPA to keep unsafe or ineffective products off the market. The registration review process gets in-depth scientific and socio-economic information from special studies of suspect chemicals and of substitue chemicals, each area of review being found increasingly essential to sound administrative decisions. When it is necessary to protect health or the environment, registration may be cancelled or suspended, or under the authorities of the new Act, products may be registered for "restricted use". These activities also support the use control strategy by establishing residue tolerances for pesticides applied to feed or food crops, by specifying proper labeling and safety precautions, and by requiring "restricted use" products to be applied only by properly trained and certified applicators. Research and policy studies are pursued to improve laboratory methodology and guide policy direction. Monitoring activities support the hazard evaluation strategy by gathering data on the health effects of long-term pesticide exposure and the distribution of pesticide residues in the environment and by the analysis of marketed pesticide products. Data gathered by these efforts support improvement of registration standards.

Technical assistance efforts support States and other Federal agencies in development and implementation of State Certification Plans and applicator certification programs; in the development and operation of applicator training programs; and by providing general technical support to State and Federal pesticide programs. Hazard evaluation is supported by investigations of the causes and effects of pesticide accidents.

The major influence on program operations in 1976 is the October 21, 1976, deadline for full implementation of the FIFRA, as amended. On the basis of regulations and guidelines promulgated in 1975, reregistration and classification action will have to be completed on 30,000 federally registered products, in addition to the normal yearly base workload of new applications and amendments. October 1976 is equally significant to the States since they are required by that time to have certified and trained most, if not all, of the estimated 2.0 million private applicators and 100,000 commercial applicators. Failure by any States to have certified enough applicators to adequately meet their pest control needs by October 1976 would have serious repercussions on the economic and food production capabilities in those States.

Summary Output Table

	1975	1976
Normal yearly base workload of registration and tolerance actions...	15,000	15,000
Reregistration and classification of presently registered interstate and intrastate products............	5,000	22,000
State certification plans submitted for review action.................	20	35

	1975	1976
States with limited applicator training programs in operation....	15	40
States with certification programs in operation.....................	5	50

Final publication of regulations:

Registration of pesticides...............	March 1975
Guidelines for registration..............	April 1975
Applicator certification standards........	October 1974
Requirements for approval of State Plans..	March 1975
State registration for special local needs	May 1975

Pesticides

Abatement and Control

Registration and Tolerances

	1975	1976	Change
Registration and tolerances........	$7,654,200	$8,114,200	+$460,000

The registration and tolerances program's major efforts include registration of all pesticide products, setting residue tolerances for pesticide products applied to food and feed crops, establishment of criteria and standards for product registration, classification, and tolerances, and conduct of special chemical reviews and other studies. The major thrust of the program during 1975, 1976 and part of 1977 will be to accomplish registration and classification of 15,000 intrastate products and the reregistration and classification of all 30,000 federally registered pesticide products by October 21, 1976, in order to comply with the deadline specified by Section 4 (c)(2) of the Federal Environmental Pesticide Control Act of 1972.

1975 Program

During 1975, final regulations governing the registration and classification of pesticides will be promulgated, and the actual reregistration and classification of products will begin. It is expected that only about 10 percent of the most widely used products are likely to be reregistered and classified by the end of the year, including a few of the more widely used intrastate products. These efforts will be in addition to the normal annual workload of processing new products, amendments, supplementary registrations, and tolerance petitions. The Agency also expects to review and approve some State plans for experimental use permits under Section 5 of FIFRA and also some State plans to register pesticides for special local needs. Prompt review and approval action on these plans will be essential for the timely initiation of these programs by the States.

1975 Accomplishments

- Complete reregistration and classification of about 5,000 products;

- Process normal annual workload of registrations and tolerance actions;

- Review about five State experimental use permits plans; and

- Review and approve about 10 State plans to register pesticides for special local needs.

1976 Program

During 1976, our efforts to complete the reregistration and classification of all registered products will have top priority. It is expected that action will be completed on 22,000 products or more, in addition to the normal workload during 1976, with the remaining reregistration and classification actions being completed by October 21, 1976. Marked improvement is expected in the efficiency of registration processing during the 1975-1976 period as a result of a more responsive reorganization and procedural improvements and better registration guidelines. Even so, demands placed on the Registration Division are expected to stretch its manpower to the limit. In addition to product reregistration, there will be a significant increase in required standard-setting activities as part of the overall classification procedures. In 1976, about 200 product groups will need to be reviewed to determine suitable terms of classification to offset acute local hazard. The more stringent use restrictions under Section 12(a)(2)(G) of FIFRA will require us to evaluate considerable more minor crop registration applications and tolerance petitions. An increased rate of intensive socio-economic cost/benefit reviews is also expected. Also, most States have indicated they intend to take advantage of Section 24(c) to register products to meet special local needs. This will require the agency to work closely with States in the preparation of submissions for certification under Section 24(c) and subsequently to take review actions to assist States in implementing these plans.

Purpose of Increase

The increase will provide funds to contract out some subprofessional, clerical, and data support functions to expedite peak workload processing and will provide for the full-year cost of the October 1974 pay raise.

Pesticides

Abatement and Control

Monitoring

	1975	1976	Change
Monitoring.......	$4,543,200	$4,564,500	+$21,300

EPA's pesticides monitoring program implements the hazard evaluation strategy. It includes: epidomiologic studies on the acute and chronic long-term human health effects from pesticide exposure; monitoring of pesticide residues in air, water, soils, and other media to determine levels and trends and anticipate the development of hazardous conditions; and analysis of routine samples of pesticide products taken from processing establishments and the market place to determine conformity with their labels. All monitoring activities are coordinated within the framework of the National Pesticides Monitoring Plan. Under this plan, data developed by other Federal and State agencies are also evaluated to provide a means for evaluating the hazard of pesticides in the environment and establishing an early alert system.

The new epidemiologic studies program, which was redesigned in 1975 to be directly responsive to regulatory decision making needs, has been conducting pesticide hazard evaluations in 12 States through contracts with universities or State health departments. Studies will now be made on new pesticides for which 15 to 20 new permits are issued each year and for which industry developed human exposure data has previously been poor or nonexistent. In addition, a new approach is being taken to obtain an incidence rate on the number of acute poisonings occuring from pesticides each year. A team of specialists will review admission records of 10 percent of the Nation's hospitals to obtain medically verified data on acute cases. Major emphasis will be given to chronic effect determinations through studies of highly exposed persons (about 3,000) from occupations such as pesticide manufacturing and formulating workers, pesticide applicators, farm workers, and householders. These individuals will be matched with control subjects and medically examined for suspected toxicologic effects. In addition, about 30 special studies will be undertaken and specifically oriented to short-term problem oriented needs including collection of data in support of cancellation actions, suspect chemical reviews, and substitute chemical reviews.

1975 Accomplishments

- Implementation of the redesigned epidemiologic studies program;
- Continued sampling and analysis of pesticide residues in soil, water and air; and
- Chemical analysis of 4,500 pesticide product samples for conformity to label.

1976 Plan

During 1976, the pesticide monitoring program will continue to provide data to evaluate the hazard of pesticides in the environment with increased emphasis on those problems requiring hard monitoring data to support pending regulatory decisions. Responsiveness of monitoring activities will be increased, and turn around time of the chemical analysis of product samples will be reduced. The epidemiologic studies program will carry on efforts to obtain data on acute pesticide poisonings by investigating hospital admission records, and will increase efforts to monitor for unforeseen health effects in the vicinity of pesticide applications under experimental use permits issued by EPA and the States. Residue profile monitoring will be continued, particularly to develop a quick response and alert system on pesticide problems of current concern. Analysis of market samples will continue, with increased efficacy testing being performed within the limits of available resources.

Purpose of Increase

The increase will cover the full-year cost of the October 1974 pay raise.

Pesticides

Abatement and Control

Technical Assistance

	1975	1976	Change
Technical assistance..	$7,324,500	$16,873,400	+$9,548,900

The top priority of EPA's pesticides technical assistance program is to support States in the development and full scale implementation of applicator training and certification programs. This is the key element in the implementation of the use control strategy. By October 21, 1976, FIFRA requires that "restricted use" pesticides be available only to applicators
tions governing applicator standards and requirements for approval of State plans. Since there will be no Federal certification programs, it will be necessary for each State to develop and implement its own certification program or face the unavailability of restricted use pesticides.

As a basis for certification, applicators must have a required level of competency which meets the Standards for Pesticide Applicators published in the Federal Register, October 1974. A major part of EPA's technical assistance resources will be devoted to the accomplishment of these objectives during 1975 and 1976. However, additional technical assistance will also be needed by States to ensure they meet their other responsibilities under statutory requirements of the Act, including experimental use permits and State registrations for special local needs.

Technical assistance resources also support EPA's accident investigation program, which contributes to the hazard evaluation strategy by determing the cause and effects of pesticide accidents.

1975 Program

Top priority efforts in 1975 are applicator training and certification. Following the promulgation of EPA's "Applicator Certification Standards" in October 1974 and "Regulations for Approval of State Plans" expected in March 1975, the States with EPA assistance will develop and, after approval, begin implementation of their plans and programs for applicator certification.

EPA and the Department of Agriculture's Extension Service have jointly developed a program for training pesticide applicators to meet the certification standards. It is estimated that over two million private applicators and over 100,000 commercial applicators will require certification. Agreement has been reached on a joint EPA/USDA-CES training program approach wherein EPA will provide funds and training materials and the State Cooperative Extension Service in coordination with the State local agency will provide the necessary applicator training. In order to meet the October 1976 effective date of the Act, this training program must be largely completed during 1976.

FY 1975 Accomplishments	Completion Dates
- Publish regulations on applicator certification standards......	October 1974
- Publish regulations for approval of State plans...............	March 1975
- State draft certification plans submitted for EPA review action	20 States by June 1975
- States with limited applicator training programs in operation.................	15 States by June 1975
- States with applicator certification programs in operation................	5 States by June 1975

1976 Plan

Most States have designated a lead agency to administer their applicator certification plans and programs, and about 20 will have submitted their plans for approval and publication in the Federal Register by the end of 1975. Key factors in the delayed timetable are: many States have biennial sessions of their legislatures in late 1975 and only one State in each EPA region is expected to complete an acceptable Certification Plan in 1975. There is also a shortage of resources available at the State level to fund the implementation of Statewide certification programs, and most States will require some initial financial assistance under Section 23(a)(2) of FIFRA to "tool up" and get their programs into operation. It is anticipated that fees and/or State appropriations will be sufficient after two years or so to finance future certification programs after the initial first round certification efforts are completed. We are therefore, requesting $1.8 million to assist the States, through grants and contracts, in financing the initial start up costs for the program.

1976 will be the key year for training pesticide applicators to meet certification standards. While we hope to have most State training programs fully operational early in 1976, over two million applicators will have to be certified by October 1975. The major training seasons coincide with the period between crop seasons, i.e., November-March. The winter of 1975-1976 is the period when most of the applicator training must take place.

Support of these State and joint EPA-State activities will place an overwhelming burden on the technical assistance resources available through regional offices. We are therefore requesting an increase in funding to meet these needs. 1976 activities will concentrate on the extension of certification and training efforts by States, as well as directing assistance to those States which initiated programs in 1975 and which have operational problems in early implementation.

The increase will provide $1.8 million for grant and contract support for States' certification programs under Section 23(a)(2) of FIFRA; and $7.2 million to provide grant and contract support for State applicator training, including funding through USDA/ES to State Cooperative Extension Services; $500 thousand to support increased regional technical assistance to assist States in the implementation of their applicator certification programs and other State responsibilities under the Act; and $48,900 to cover the full-year cost of the October 1974 pay raise.

Pesticides

Enforcement

	1975	1976	Increase or Decrease
Budget Authority			
Pesticides enforcement...	$3,408,500	$3,582,900	+$174,400
Total.......	3,408,500	3,582,900	+174,400
End-of-Year Employment			
Pesticides enforcement	153	153	...
Total........	153	153	...

Purpose

The EPA pesticides enforcement program includes the registration and inspection of pesticide producing establishments; the surveillance of pesticides products on the market place, imported pesticide products, experimental use permits and pesticide uses; and the initiation of enforcement actions when violations are detected, including civil actions, criminal prosecutions, stop sales, and injunctive actions as required to implement the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. The major enforcement program goal is to insure compliance with the FIFRA through the use of these tools.

There are an estimated 6,500 producers of pesticides, as well as millions of users of pesticides, all with a potential toward causing human health problems. The major role of enforcement in the total EPA pesticides program is to insure that the registration requirements of the Act, discussed under the pesticides abatement and control program, are being adhered to and that pesticides are being used in accordance with their registered labels. In addition, FIFRA gives EPA the authority to enter into cooperative enforcement agreements with States. In this regard, EPA expects to begin involving the States in a major role in implementing the FIFRA during 1976, particularly with regard to market surveillance, use surveillance, and sharing evidence for enforcement actions.

Although all States have some type of pesticide enforcement program, there is a need for an overall Federal effort to channel singular State actions toward a national enforcement program. EPA intends to pursue such agreements with States in 1976. Emphasis will be placed on developing a cooperative climate whereby the Federal Government manages overall national policy within which States can operate,based on local need.

1975 Program and Accomplishments

In 1975, EPA plans to develop an inspection program of the required books and records of producer establishments and check a cross-section of these firms' records with those required under Section 7 of the Act. The Agency will register approximately 6,500 establishments producing pesticides and prepare assessments of current State enforcement authorities, capabilities, programs, and resources with a view toward greater Federal/State cooperation. A program of pesticide use surveillance of products suspected of presenting hazards to human health and the environment will be developed and EPA will check shipment and use of 100 experimental use permits. EPA will inspect approximately 2,500 pesticide producer establishments; collect approximately 4,500 product samples; and initiate an estimated 200 stop sales, 600 civil actions, and 20 criminal prosecutions. Finally, EPA is assisting the U.S. Customs Service in developing regulations for the importation of pesticides and devices under Section 17 of the Act.

1976 Plan

The pesticides enforcement program for 1976 will be a continuation of on-going activity to inspect products on the market to determine if they comply with the terms under which they were registered. In addition, the program will provide for the continuation of the activities and responsibilities initiated in 1974 to implement the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. These include the inspection of manufacturers and formulators of pesticides, the registration of pesticide producers, and the surveillance of pesticide usage with a view toward checking environmental insults and protecting human health. Also, the surveillance of experimental use pesticides will be continued. Pest control operators will be interviewed to aquaint them with their new responsibilities under FIFRA. The sampling program will be refined to shift from a somewhat random approach against violative products to factor in information on products with high production levels and products whose use could potentially affect human health or cause environmental harm.

In keeping with the emphasis on greater Federal/State cooperation as defined in Section 23(a)(1) of the Act, the Agency expects to involve a number of States in the enforcement of FIFRA. State officials are more closely associated with both the pesticide producers and users than are EPA headquarters or regional offices. Therefore, State agencies are in a unique position to complement the Federal pesticide enforcement program, particularly in the areas of market and use surveillance and in the sharing of evidence for enforcement actions. Although all 50 States have some type of pesticide control program, in general, resource limitations and staff capabilities hamper the effectiveness of these programs.

The most significant change in the pesticides enforcement program will be the shift in emphasis from separate Federal and State pesticide programs toward integrated programs with EPA serving as a coordinating focal point.

The Agency is developing a general Federal-State Cooperative Enforcement Agreement which will outline areas of responsibility for EPA and the States and will encourage States to cooperate by reducing Federal presence in States that do cooperate. This shift will be gradual with EPA encouraging one State in each region to cooperate in the enforcement of FIFRA.

In 1976, EPA will also develop a strategy for surveillance of the use of restricted pesticides by certified applicators and develop guidance for the enforcement of pesticide disposal regulations. A sampling program for those devices declared to be subject to the Act under Section 25(c)(4) will also be prepared.

Purpose of Increase

The proposed increase will provide for the full-year cost of the October 1974 pay raise.

Pesticides

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Processess and Effects........	$11,193,000	$11,197,900	+$4,900
End-of-Year Employment			
Processes and Effects........	148	148	...

Purpose

This program supports the Agency's pesticide programs including development of data required to support administrative reviews and litigations; monitoring; development of new methods of pest control; and development of long term pesticides strategy. Major areas of on-going research include. (1) determination of human health effects; (2) development of pesticide residue analytical methods; (3) development of model ecosystems; and (4) determination of ecological effects.

Pesticides

Research and Development

Processes and Effects

	1975	1976	Change
Processes and effects......	$11,193,000	$11,197,900	+$4,900

EPA conducts an extensive research program on pesticides released into the environment to determine more precisely their effects on human, animal, and aquatic life and to develop better analytical methods for measuring pesticide residues in plant and animal tissue. A variety of toxicological studies are carried out to determine the acute toxicities of pesticides in mammals and aquatic organisms, the distribution and effects of pesticides on mammalian organ systems, and their effects on metabolic reactions, reproduction, and behavioral responses. Laboratory bioassays of aquatic animals and organisms are conducted to determine acute and chronic toxic effects of pesticides on fresh and salt water life. This effort provides the knowledge of levels and pathways of pesticides contamination necessary to support pesticide registration, toxic effluent standards, water quality criteria for estuarine and coastal waters, and ocean disposal permits. Analytical methods for pesticides residues are developed for the monitoring programs of EPA, State, and local governments. These include determination of pesticides in human tissue (National Human Monitoring Program), soil, air, and water. Research is being carried out in cooperation with the National Science Foundation and the Department of Agriculture on new and improved pest control methods to further the search for environmentally safe alternative control techniques. In the substitute chemicals program, initiated in late 1974, emphasis is being placed on a thorough evaluation of chemicals commonly used as substitutes for pesticides recently cancelled or under litigation. Mammalian toxicology studies in this program emphasize, mutagenesis and carcinogenesis, and new methods are being developed in inhalation toxicology. These compounds are being examined in laboratory models of terrestrial and aquatic ecosystems, and are being analyzed chemically for impurities known to be toxic.

1975 Program

The pesticide research program for 1975 includes the development of inhalation toxicology methods for pesticides and a study of acute inhalation effects of alternate chemicals. Also to be conducted are complete mutagenesis tests on alternate pesticides and the development of human exposure studies relating to the safe handling of pesticides (storage, spillage, and disposal) with special emphasis on application to crops and reentry into sprayed fields. Development and evaluation of alternative methods of pest control to minimize the use of some pesticides by the strategic use of natural pest enemies, pathogens, genetic modifications, and insect hormones will be initiated. Analytical methods will be developed to determine pesticides, their metabolites, their degradation products, and formulation contaminants in tissues and environmental media. Finally, technical assistance will be provided to EPA regional and program offices through provision of special studies, consultation, and expert testimony in legal proceedings.

1975 Accomplishments

- Completed a study of agricultural workers which verified a direct correlation between exposure to organophosphate pesticides and urinary metabolites, as measured by a new method developed at EPA laboratories;

- In people accidentally poisoned with a chlorinated organophosphate pesticide, it was found that patients show symptoms as long as tissue residues persist, and that the effects last much longer than with non-chlorinated organophosphates;

- Developed methods for determining hexachlorobenzene in air and human tissue:

- Reported that malathion inhibited the population growth of marine protozoa;

- Identified the presence of an arthropod virus in shrimp exposed to environmental levels of polychlorinated biphenyls; and

- Revised the bioassay procedures for EPA's ocean disposal permit program.

1976 Plan

Elements of the 1975 program to be continued in 1976 include development of inhalation toxicology methods, studies of alternate pesticides, development of mutagenesis screening systems, and development and evaluation of alternative methods of pesticide control. Studies on the relationship between viral infection and polychlorinated biphenyls (PCB) exposure in shrimp and studies on the effect of mirex and heptachlor in marine ecosystems will be completed in .976. Development will be initiated on a sensitive, specific detector for pesticides containing chlorine, sulfur and/or nitrogen as well as an efficient system for collecting and determining pesticides in air. Also, analytic methods for the dioxins in tissues, in environmental media, and in pesticide formulations will be developed.

Purpose of Increase

This increase is required for a minor adjustment in personnel compensation and benefits.

Radiation

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control..........	$4,569,900	$4,337,100	-$232,800
Research and Development......	2,637,700	1,640,000	-997,700
Total..........	7,207,600	5,977,100	-1,230,500
End-of-Year Employment			
Abatement and Control	191	174	-17
Research and Development	72	57	-15
Total..........	263	231	-32*

*There is an additional reduction of 30 positions for off-site monitoring, which is reflected under Advances and Reimbursements in the summary tables.

Overview and Strategy

Radiation presents an environmental public health risk from numerous sources, to which some public exposure is inevitable. All radiation exposures result in some adverse health effect. This basic concept governs EPA's approach to assessing and preventing public health risk from environmental radiation.

Public exposure to ionizing radiation results from natural background levels, medical x-rays, manufacturing processes, from fallout due to weapons tests, occupational exposure, and from various aspects of the nuclear power industry (fuel processing, reactor operations, waste handling, etc.). Of these, natural background forms the largest part, followed by man-made sources; exposure to nonionizing radiation comes from radio transmissions; radar, microwave sources, and others.

Given the diverse nature of radiation sources and the rapid development of new ones, there is a Federal responsibility to carry out research on radiation and health, to assess the impact of sources on the environment, to develop standards and guidance for their control, and to document radiation levels and exposures that occur. EPA's role in radiation is unique in that it encompasses all sources of ionizing and nonionizing radiation whether environmental or nonenviornmental in nature; no other Federal agency has this broad responsibility.

The EPA radiation program is directed toward preventing all unnecessary environmental exposures to ionizing radiation. The need for standards of exposure to nonionizing radiation is undergoing review. The basic authority for these activities is set forth in the Atomic Energy Act (the responsibility for portions of which were transferred to EPA in Reorganization Plan No. 3), the Public Health Service Act, and the authorities of the Federal Radiation Council which were also transferred to EPA in Reorganization Plan No. 3. Additional authority is contained under the National Environmental Policy Act wherein environmental impact statements are reviewed for proposed Federal nuclear energy facilities and programs.

In order to fulfill its responsibilities, EPA pursues its basic radiation protection strategy through three interdependent functions: criteria and standards development, technology assessment, and environmental assessment.

EPA conducts health effects research for ionizing and nonionizing radiation to better assess the potential risk of ambient radiation exposure. This is necessary in order to set standards for environmental radiation from the uranium fuel cycle, to set medical x-ray guidance, and to assess the impact of radioactive discharges associated with various manufacturing processes. The priority and timing of these efforts are determined by several factors: the degree of control possible, the anticipated growth of the sources, and the extent of exposure due to the source. As a result, EPA will be completing an environmental standard for the uranium fuel cycle in 1975 since a large increase in nuclear generated electric power is projected.

Technology assessment provides the capability to perform independent environmental analyses of radiation technologies being applied by other agencies. As a result, a base is established from which substantive reviews of environmental impact statements are possible and from which the requirements of the National Environmental Policy Act can be carried out.

To determine the level of radiation exposure to the public, EPA carries out extensive monitoring activities and other environmental assessments, making this information available in publication form. EPA will continue to reorient the monitoring networks toward specific sources of radiation and away from the fallout oriented ambient measurements, since the reduction of above ground nuclear testing makes fallout a less significant part of the total exposure (a standby network will be maintained).

One significant aspect of monitoring is the radiological surveillance EPA performs for the Energy Research and Development Administration (ERDA) in off-site areas adjacent to ERDA's Nevada Test Site. The program is organized around three kinds of surveillance -- routine, special, and test oriented. In the routine surveillance program, sampling (air, milk, and water) and radiation exposure measurement networks are maintained to record environmental radiation levels and their variations. "Special" surveillance includes monitoring for possible migration of test related radioactive debris in groundwater on and around the site and soil sampling programs. The test oriented program involves positioning radiation monitoring teams in the area most likely to be affected by a release of radioactive material to the atmosphere. Test oriented surveillance includes sampling by aircraft and long range tracking of debris in the event of a radioactive release. The work that EPA does for ERDA is reflected under the Advances and Reimbursements accounts.

The legislative authorities in radiation set out enforcement responsibilities for other agencies, notably the Nuclear Regulatory Commission, and therefore EPA has no activities in this area with the exception of regulating the issuance of permits to discharge wastewater that may contain radioactive material. EPA does maintain an overview, however, in order to assure that the standards and Federal radiation guidance which are set are followed.

EPA also makes assistance available to States and localities through its regional offices and laboratories. This includes assistance with drafting Emergency Response Plans and analysis of monitoring samples.

The 1976 program includes a decrease of 62 positions: 17 positions from the abatement and control program, 15 from research and development and 30 from the ERDA reimbursed off-site monitoring program in Nevada. In addition, in 1975, 10 positions are being transferred from the radiation program to the noise control program. The abatement and control reductions will be applied to higher priority programs. Standards and regulations development and ambient monitoring will not be affected. Research efforts will be redirected to critical areas and gaps in knowledge where no other agency has an on-going program or where there is a specific environmental problem which requires EPA attention. The 30 position reduction from the 88 people currently performing off-site monitoring will be implemented after March 31, 1976, at which time initiation of the Test Ban Treaty and Threshold Limitation Agreement is expected to decrease the level of test activity at the Nevada Test Site.

Summary of Increases and Decreases

1975 Radiation Program	$7,207,600
Abatement and Control	-232,800
A decrease associated with the reduction of program personnel.	
Research and Development	-997,700
A decrease associated with the reduction of personnel and narrowing the scope of the program.	
1976 Radiation Program Request	5,977,100

* This program also reflects the reduction of 30 positions from the ERDA off-site monitoring program. (Funds are reimbursed from the Energy Research and Development Administration).

Radiation

Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control			
Standards and Guidelines...	$789.4	$796.7	+$7.3
Monitoring................	1,558.5	1,407.8	-150.7
Technical Assistance.......	2,222.0	2,132.6	-89.4
Subtotal................	4,569.9	4,337.1	-232.8
Research and Development			
Processes and Effects......	2,637.7	1,640.0	-997.7
Total................	7,207.6	5,977.1	-1,230.5
End-of-Year Employment			
Abatement and Control			
Standards and Guidelines...	27	27	...
Monitoring................	59	50	-9
Technical Assistance.......	105	97	-8
Subtotal................	191	174	-17
Research and Development			
Processes and Effects......	72	57	-15
Total................	263	231	-32

Radiation

Abatement and Control

	1975	1976	Increase or Decrease
Budget Authority			
Standards and Guidelines........	$789,400	$796,700	+$7,300
Monitoring.........	1,558,500	1,407,800	-150,700
Technical Assistance........	2,222,000	2,132,600	-89,400
Total........	4,569,900	4,337,100	-232,800
End-of-Year Employment			
Standards and Guidelines........	27	27	...
Monitoring.........	59	50	-9
Technical Assistance........	105	97	-8
Total........	191	174	-17

Purpose

The radiation program's abatement and control activities have, as their main focus, EPA's responsibilities for setting specific standards for radiation levels in the general environment and for setting the basic policies which provide the basis for all Federal radiation protection programs. Other components of the program contribute to guidelines and standards effort, or to the improvement of State, local, or other Federal radiation control programs. These include surveillance and monitoring to determine levels of environmental radiation; provisions of technical assistance to other governmental agencies; and the conduct of reviews of federally supported or licensed projects which are a source of environmental radiation and related engineering studies.

Radiation

Abatement and Control

Standards and Guidelines

	1975	1976	Change
Standards and guidelines.........	$789,400	$796,700	+$7,300

EPA has two primary responsibilities associated with radiation protection standards and guidance. The first responsibility is to establish environmental protection standards to limit radiation levels in the general environment for both ionizing and nonionizing radiation. The second involves the formulation of basic Federal policies on radiation protection standards.

1975 Program and Accomplishments

- Complete the uranium fuel cycle standards;
- Review the need for plutonium standard; and
- Review the need for nonionizing radiation standards.

1976 Plan

- Publish guidance further defining the limit, "as low as practicable", presently contained in Federal Radiation Guidance;
- Evaluate x-ray exposure reduction in Federal health care programs; and
- Develop medical x-ray guidance.

Purpose of Increase

The $7,300 increase is to provide for the full-year cost of the October 1974 pay raise.

Radiation

Abatement and Control

Monitoring

	1975	1976	Change
Monitoring..........	$1,558,500	$1,407,800	-$150,700

The purpose of EPA's radiation monitoring activity is to determine the levels of existing radiation from specific sources, identify critical pathways, and evaluate the impact of the source on the environment. The program determines any changes occurring in the radiological quality of the environment, the magnitude of this change, and the nature and probable source of the contaminant. Population exposure estimates are made from all sources of ionizing and nonionizing radiation to determine if environmental levels are within established radiological guidelines and standards. The effectiveness of existing control programs is also evaluated and envrionmental radiological quality data from monitoring programs is published. The program also provides consultation and technical assistance on monitoring activities to States and other Federal agencies.

1975 Program and Accomplishments

- Continue studies to determine the impact of nonionizing radiation on man and the environment;
- Continue field investigations of uranium mill tailings problem in nine western States;
- Operate existing radiation surveillance networks and collect and publish radiological data;
- Develop models for predicting environmental impact of radioactive discharges from nuclear facilities and other radiation sources; and
- Conduct environmental radiological assessment following accidental releases of radioactivity from nuclear facilities.

1976 Plan

- Collect and analyze data on radioactivity in air, water and milk;
- Establish an actinide soil monitoring program; and
- Complete dose summaries from all sources and compare with standards.

Purpose of Decrease

The decrease reflects lower personnel costs due to conversion of Radiation Data and Reports from a monthly publication to an annual report.

Radiation

Abatement and Control

Technical Assistance

	1975	1976	Change
Technical assistance.	$2,222,000	$2,132,600	-$89,400

Technical assistance is a broad classification which can be divided into three major components: (1) State assistance, training, and regional program development; (2) technology assessment, including the environmental impact statement review of nuclear facilities; and (3) engineering studies of new technology. The primary efforts of the State assistance element are oriented toward working with State radiation control programs in their developmental efforts and bringing to this effort a national perspective. This is accomplished by a small staff in each of EPA's regional offices. The technology assessment effort is concerned with evaluating the impact of nuclear technology on the environment. As part of its overall responsibilities in technology assessment, EPA reviews environmental impact statements submitted by other Federal agencies and conducts detailed evaluations of proposals for the design, construction, and modification of radiation producing facilities which are to be operated by Federal agencies or are subject to Federal regulation. In order to provide the technical base necessary to conduct these environmental assessments, EPA also conducts engineering studies aimed at providing a better understanding of the design and operation of new technologies as they impact on the environment (e.g., new types of power reactors or designs of fuel processing plants).

1975 Program and Accomplishments

- Continue the review of environmental impact statements (estimated 45 routine reviews);

- Continue an analysis of the environmental impact of low-level waste disposal;

- Complete the review of an ERDA study of light water reactor accident risk; and
- Continue providing technical information and assistance to State and local governments, including promotion of State Control programs, laboratory analysis of special samples, and development and testing of emergency plans.

1976 Plan

- Continue the review of environmental impact statements (estimated 65 routine reviews);
- Assess the environmental impact of new power reactor technology-high temperature gas-cooled reactor and liquid metal fast breeder reactor; and
- Continue providing technical information and assistance to State and local governments, including laboratory analysis of special samples, and development and testing of emergency plans.

Purpose of Decrease

The decrease reflects lower personnel costs due to the consolidation of some program activities.

Radiation

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Processes and effects.....	$2,637,700	$1,640,000	-$997,700
Total..................	2,637,700	1,640,000	-997,700
End-of-Year Employment			
Processes and effects.....	72	57	-15
Total..................	72	57	-15

Purpose

The radiation research and development program provides EPA with an information base for standards setting and regulatory actions. The program consists of two parts: studies of the health effects resulting from exposure to radiation and studies of the transport of radiation through the environment.

Radiation

Research and Development

Processes and Effects

	1975	1976	Change
Processes and effects.....	$2,637,700	$1,640,000	-$997,700

The health effects of radiation are studied by epidemiological and toxicological methods. Adverse health effects can result from exposure to ionizing radiation such as radionuclides emitted by nuclear power reactors or from high dose exposure to nonionizing radiation as found in the near field of high power transmitting antennae. The scope of the radiation program in health effects of ionizing radiation is narrow, being restricted to support of epidemiological studies by the Atomic Bomb Casualty Commission and to limited laboratory studies of the radiotoxicity of krypton-85 and tritium, radionuclides arising from present nuclear power reactor operation. The primary aim of the program of studies of nonionizing radiation is to determine the potential biological significance of chronic exposure at levels below that which can cause thermal stress. Transport studies are concerned with describing the pathways by which selected radionuclides can reach man. The radiation pathways research is an integral part of the program to understand human exposure and consequent health effects. The problem is one of describing the transport of radionuclides through the biosphere by the various pathways which govern their movement, chemical and physical change, and ultimate fate. The program has been focused on the most important radionuclides from the point of view of the long range problems associated with the fast breeder reactor program.

1975 Program

The objectives of the health effects program include the evaluation of the latent effects of acute exposure to ionizing radiation (Atomic Bomb Casualty Commission) and definition of the dose response curve for incidence of thyroid tumors in children exposed to diagnostic levels of radioiodine. Determination of the carcinogenic potential of implanted particules of plutonium in the lungs of hamsters is being completed in the 1975 program. Also, the acute and chronic effects of inhalation and whole body exposure of guinea pigs to krypton-85/air mixtures are being defined. Finally, an identification of the biological effects of nonionizing radiation in animal models is being made.

The radiation pathways research program includes studies of the physical/chemical characteristics of plutonium released from nuclear facilities and deposited within the biosphere. Meteorological factors associated with resuspension of plutonium from contaminated land surfaces are being quantified. Also, an investigation is being conducted on the chemical kinetics of plutonium in soil as affected by soil type and indigenous plants. Finally, a determination is being made of the magnitude of plutonium absorption by aquatic plants.

1975 Accomplishments

- Initial studies of teratogenicity of electromagnetic radiation have been negative;
- Tissue analyses from juvenile goats have indicated that intestinal absorption of plutonium from in vivo and in vitro labeled milk is approximately the same;
- Four different chemical/physical forms of plutonium particulates have been identified from resuspended soil;
- Concentrations of plutonium on root systems of aquatic plants have been observed under laboratory conditions; and
- Uptake of tritiated hydrogen gas has been demonstrated for plant species.

1976 Plan

In 1976, median lethal exposure data for krypton-85 inhalation will be correlated with tissue distribution studies. Epidemiological studies will be continued using retrospective data from singularly exposed population groups such as is the case with the Atomic Bomb Casualty Commission studies. Radiotoxicological studies of tumorigenesis, life span shortening and effects on reproduction of rats exposed continuously to tritiated water will be conducted. Effects on the fetal and embryonic stages of growth will be emphasized. Studies of the effects of nonionizing radiation on biopolymers (bovine serum albumin, ribonuclease) will be completed. Studies on teratologic and neurobehavior of small animals will be conducted using nonionizing radiation as the stressor. Also, a determination will be made of the isotopic differences between 238 Pu and 239 Pu soil plant transfer and storage for correlation with biological effects. A determination will be made on the effects of rainfall, irrigation, and fertilization on the migration of selected radionuclides in soil. Finally, an investigation will be made on the exchange rates and effects on vegetation of gaseous tritium with an accompanying determination on the environmental variables controlling this exchange.

Purpose of Decrease

In an effort to release research funds for use in other areas, the radiation program will be more tightly focused in 1976 on the health effects of nonionizing radiation and on a limited group of long lived ionizing radionuclides associated with the fast breeder reactor program. The Agency will also continue to participate in the Atomic Bomb Casualty Commission Study. This will permit a reduction in funding of $1 million, and a decrease of 15 positions.

Noise

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control......	$4,889,000	$9,592,200	+$4,703,200
Enforcement....	21,300	521,700	+ 500,400
Research and Development..	544,900	45,000	- 499,900
Total......	5,455,200	10,158,900	+ 4,703,700
End-of-Year Employment			
Abatement and Control......	55	75	+20
Enforcement....	1	10	+ 9
Research and Development..	3	1	- 2
Total......	59	86	+27

Overview and Strategy

Inferential data implies that urban environmental levels of noise are increasing at about 1-2 db (decibels) per decade. This increase is occurring despite the availability of substantial control technology applicable to most major sources of noise. Competitive cost factors and lack of regulation or enforcement have acted as deterrents to the application of such technology. Recent increased public concern has stimulated the need for Federal control of new products sold in interstate commerce and Federal control of noise levels in interstate transportation.

Evaluation by EPA indicates that continuous exposures to urban environmental noise levels averaging above 70 Ldn (weighted day-night decibel level) may be harmful to health, especially when coupled with shorter, more intense exposures in the workplace, in travel, and in various recreational and hobby and home maintenance pursuits. It is estimated that about 13 million people presently reside in areas where the

Ldn exceeds 70. Furthermore, passengers in and operators of most common models of transportation are exposed to noise substantially above 70 dB(A), as is a substantial portion of the working population.

Approximately 100 million people reside in areas where the Ldn exceeds 55, a level clearly identified with marked annoyance. While this level of community noise results from a blending of all types of sources, vehicular traffic, aircraft operations and construction site noise are major factors in the sustained levels.

The Noise Control Act of 1972 provides the basis for the national environmental noise control program in EPA. The legislation generally recognizes the need for Federal regulation of new product noise sources and is preemptive of State regulation for such products. It provides EPA with such regulatory authority and recognizes the unique roles of the Department of Transportation (DOT) and the Federal Aviation Administration (FAA). With respect to interstate surface commercial carriers, EPA promulgates standards for new and in-use vehicles and DOT enforces the in-use standards; with aircraft, EPA recommends regulations and standards for emissions and operations of aircraft and around airports and FAA promulgates and enforces. State and local agencies retain the right to control other in-use product noise problems and can adopt in-use regulations consistent with the Federal regulations in the above in-use situations. The legislation charges EPA with the role of coordinating Federal noise control and research and development activities.

EPA goals are to:

1. Reduce the urban noise levels above 70 Ldn so that less than one million of the estimated 13 million population residing in such areas remains exposed to such high community levels by 1992;

2. Reduce urban noise levels above 55 Ldn so that less than 40 million of the estimated 100 million population residing in such areas remain exposed to such community levels by 1992;

3. Require by 1978 that warning labels be applied to engine powered equipment posing a threat to the operator's hearing and used in a nonoccupational

setting; and

4. Reduce noise levels inside new public transportation equipment to 75 dB(A) by 1980.

These goals are generally achievable by implementing presently available technology or that anticipated from ongoing research. In the case of the first two goals, the technology is to be implemented through new product regulations by 1982 with an estimated 10 year turn-over in the product population, i.e., by 1992. However, the attainment of these two goals also requires complementary State and local regulatory and enforcement action allowed by the Federal legislation. Emphasis must thus be given to appropriate Federal technical assistance.

Labeling will be used to augment regulation in those situations where the individual's exposure has health significance and can be substantially controlled by personal protective equipment. Potential nuisances resulting from such equipment can best be controlled by State and local use regulations.

Goal four can be achieved by direct regulation or by the Federal influence on equipment standards through support of mass transit programs.

In order of priority, the major actions EPA is undertaking are:

(1) Reduction of airport and aircraft noise.

(2) Reduction of noise from interstate motor carriers and railroads.

(3) Protection against voluntary high level individual exposure through product labeling.

(4) Reduction of noise from construction sites.

(5) Reduction of noise in the interior of public transport.

Workplace noise exposure is not included in this list of EPA priorities in recognition of separate legislation specifically charging The Occupational Safety and Health Administraction (OSHA) with regulatory and enforcement functions in this area.

The strategy envisions active, cooperative working relationships with DOT, FAA, the Consumer Product Safety Commission, and OSHA in addition to State and local agencies in carrying out abatement and control and enforcement programs. EPA intends to make full use of research and development programs conducted by the above agencies and DOD, NASA, and the private sector in lieu of establishing a substantial independent research and development effort. As implied by the law, EPA will continue its coordinative function with respect to control and research and development.

EPA enforcement of new product regulations is scheduled to begin in late 1976 for air compressors and in 1977 for heavy and medium duty trucks. Steps must be taken in 1976 through completion of the necessary planning, rulemaking, and informational programs in preparation for enforcement of new product regulations in 1977. Manufacturers have also indicated that they desire the flexibility to verify production before the regulations are effective, i.e., as soon as they are promulgated. EPA will strengthen technical assistance to the States in preparation for their complementary in-use enforcement role, both in areas where new product regulations have been established and in localized problem areas more susceptible to State rather than Federal enforcement.

Summary of Increases and Decreases

1975 Noise Program	$5,455,200
Abatement and Control	+4,703,200
An increase associated with additional personnel and contract support to hasten the development of standards and guidelines.	
Enforcement	+ 500,400
An increase to provide a noise enforcement capability.	
Research and Development	- 499,900
A decrease associated with reprogramming of personnel and funds to higher priority areas.	
1976 Noise Program Request	10,158,900

Noise

Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control			
Standards and Guidelines.....	$3,467.6	$8,264.4	+$4,796.8
Technical Assistance.....	1,421.4	1,327.8	-93.6
Subtotal...	4,889.0	9,592.2	+4,703.2
Enforcement			
Noise Enforcement	21.3	521.7	+500.4
Research and Development			
Processes and Effects.......	351.0	...	-351.0
Control Technology	193.9	45.0	-148.9
Subtotal...	544.9	45.0	-499.9
Total...	5,455.2	10,158.9	+4,703.7
End-Of-Year Employment			
Abatement and Control			
Standards and Guidelines....	29	49	+20
Technical Assistance....	26	26	...
Subtotal...	55	75	+20
Enforcement			
Noise Enforcement	1	10	+9
Research and Development			
Processes and Effects......	1	...	-1

	1975	1976	Increase or Decrease
Research and Development (cont.)			
Control Technology	2	1	-1
Subtotal...	3	1	-2
Total....	59	86	+27

Noise

Abatement and Control

	1975	1976	Increase or Decrease
Budget Authority			
Standards and Guidelines...	$3,467,600	$8,264,400	+$4,796,800
Technical Assistance...	1,421,400	1,327,800	- 93,600
Total......	4,889,000	9,592,200	+ 4,703,200
End-of-Year Employment			
Standards and Guidelines...	29	49	+20
Technical Assistance...	26	26	...
Total......	55	75	+20

Purpose

The Noise Control Act of 1972 provides authority for the establishment of noise emission standards and labeling regulations for products distributed in commerce as well as noise standards for interstate motor and rail carriers. The Act further requires EPA to review aircraft and airport noise control practices and to propose appropriate noise abatement regulations for the Federal Aviation Administration to promulgate. Noise emission standards, which are intended to protect the public health and welfare, will reflect the degree of noise reduction achievable through application of the best available technology, taking into account the cost of compliance and appropriate safety considerations. The Act makes EPA responsible for coordination of all noise control and noise research programs being carried out by the Federal Government. It extends EPA's original authority (under the Clean Air Amendments of 1970) to provide technical assistance to Federal agencies to include technical assistance to State and local governments to facilitate development and implementation of their noise control programs. In support of all these activities, EPA disseminates information on the effects of noise, acceptable noise levels, and techniques for noise measurement and control.

Noise

Abatement and Control

Standards and Guidelines

	1975	1976	Change
Standards and guidelines.....	$3,467,600	$8,264,400	+$4,796,800

The Noise Control Act of 1972 requires the Environmental Protection Agency to promote an environment free from noise that jeopardizes public health and welfare. The major regulatory thrusts of this legislation are establishing noise emission standards for newly manufactured products which are major sources of noise and designating products for labeling as to noise levels; development and promulgation of standards for interstate railroad and motor carriers (enforced by the Department of Transportation); and developing and recommending to the Federal Aviation Administration standards for the control of aircraft and airport noise.

1975 Program and Accomplishments

All actions with mandatory deadlines under the legislation will be completed in 1975. These actions include:

- Publication of a criteria document (Section 5 of the Noise Control Act);

- Publication of a document defining requisite noise levels protective of health and welfare (Section 5 of the Act);

- Promulgation of initial regulations for in-use interstate motor carriers (Section 18) and railroads (Section 17)(enforced by DOT);

- Publication of the first and second lists in a series identifying major sources of noise (Section 5);

- Promulgation of the two new product (portable air compressor and medium and heavy duty trucks) regulations required by the initial listing of major noise sources; and

- Publication of a report to Congress on airport-aircraft noise problems.

Other major actions will include the proposal of eight aircraft regulations to the FAA and proposal of labeling regulations for hearing protectors. In addition, active interagency panels have been established for the coordination of Federal noise research and development. Environmental impact statements will also be reviewed.

1976 Plan

- Obtain cost, technology, and health effects assessment data for 19 potential product regulations. These include actions relative to 11 transportation, six construction and two general products;

- Publish five proposed product regulations;

- Promulgate three and publish several proposed labeling regulations;

- Obtain preliminary advanced planning cost, technology, and health effects data on future possible candidates for regulations; and

- Provide inputs to FAA aircraft and airport regulations.

Purpose of Increase

In 1975, regulations suggested by the aircraft and airport noise report completed in 1974 will be developed and proposed to FAA for promulgation. To ensure adoption and implementation of these regulations, man-years must continue to be devoted to maintaining a close working relationship with the FAA and to defending or revising the proposals. Also, the rate at which noise emission standards for surface transportation and other new products are developed and proposed must be significantly stepped up. The major program increase in funding is in this area. While a significant beginning was made in this area in 1975, the funding recognizes the necessary increase in rate of regulation to meet the program goals and the fact that it requires between two and three years of time to carry a regulation and supporting documentation from inception to promulgation. The proposed budget increase will allow needed expansion of those activities.

Noise

Abatement and Control

Technical Assistance

	1975	1976	Change
Technical assistance.....	$1,421,400	$1,327,800	-$93,600

EPA provides technical information and assistance to State, local and other Federal agencies for the abatement and control of noise. This assistance consists of guidance and direct field support to State and local agencies in implementing noise control programs, developing model noise laws and ordinances, coordinating Federal noise control programs, and examining Federal facilities for compliance with State and local laws. Other assistance includes specialized workshops, seminars, and training sessions covering the selection of equipment, training of personnel, collection and analysis of data, and compliance and enforcement procedures. In 1975, greater effort will be applied to assisting State and local agencies in development and implementation of their noise control program. Such programs become increasingly important as EPA develops its noise source regulations, the effectiveness of which will often depend on application of local use standards. The attainment of EPA goals for the substantial reduction of community noise and hence the populations at risk from a health or welfare point of view is partially dependent on complementary State and local efforts envisioned by the law.

1975 Program and Accomplishments

Activities carried on through 1975 will include:

- Continuation of technical assistance to State and local governments in development of noise control programs;
- Provision of information and assistance concerning model noise laws and ordinances;
- Promotion of noise workshops and training sessions to assist State and local governments in the

development and implementation of noise control programs;

- Updating a report on State and local governments' nonoccupational noise programs for use in preparing a report to Congress on the status of noise control programs;
- Conducting community noise surveys to characterize public health and welfare effects of noise which will be useful in the development of noise product regulations and become part of an on-going national community environmental noise assessment program;
- Consultation with all Federal agencies which propose standards and regulations for noise control;
- Stimulation of Federal interagency and intergovernmental coordination to deal with noise control problems;
- Submission of the first report to the Congress on the status of noise control and research programs of all Federal agencies; and
- Stimulation of the development of low noise emission products by certifying certain products as eligible for preference in Federal Government purchasing practices.

1976 Plan

- Publish model local government noise ordiances;
- Publish noise guidelines for local building codes;
- Continue technical assistance to States and local governments in development of noise control programs;
- Collect information and data (noise surveys, etc.) to be used in development of product regulations;
- Complete second report on the status and progress of Federal noise research and control programs;
- Assist Federal installations to comply with State and local noise requirements; and

206<

- Continue development of trend noise monitoring systems for future assessment of noise impacts.

Purpose of Decrease

In order to fully support the development of standards and regulations, some technical assistance resources will be redirected to the collection and interpretation of product source emission data and measuring techniques.

Noise

Enforcement

	1975	1976	Increase or Decrease
Budget Authority			
Noise Enforcement...	$21,300	$521,700	+$500,400
Total......	21,300	521,700	+ 500,400
End-of-Year Employment			
Noise Enforcement...	1	10	+9
Total......	1	10	+9

Purpose

The purpose of the noise enforcement program is to achieve compliance with Federal noise standards and labeling requirements for new products as authorized by the Noise Control Act of 1972 and developed as discussed in the abatement and control section.

The noise enforcement program will assure compliance with the noise emission standards promulgated under the Noise Control Act by the Office of Noise Abatement and Control.

After satisfying the increased costs for personnel, the primary emphasis will be upon the selection and development of a Noise Test Facility with which to implement the enforcement of the standards.

1975 Program and Accomplishments

In 1975, emphasis in the noise enforcement program will be on locating and developing a Noise Test Facility site and strategy, and developing policy and regulations for achieving compliance with Federal noise standards and labeling requirements for new products. In 1975, the Agency plans to promulgate regulations for implementing the enforcement strategy for new product noise emission standards (medium and heavy duty trucks and portable air compressors), to develop the strategy for Federal enforcement of such standards in-use, and to participate in finalization of labeling requirements for new products. EPA will consult with the Department of Treasury on development and finalization or regulations for new products offered for importation which are subject to noise standards, and will develop procedures for coordinating with the Department of Transportation in the enforcement of new truck, new compressor, and motor carrier standards.

A Noise Test Facility site will be selected and development begun to provide the means for carrying out enforcement of new truck, new compressor, and motor carrier standards. We will also develop policies for assisting State/local enforcement authorities in regulating products in-use.

1976 Plan

New Product Noise Enforcement

The new product noise emission standards for medium and heavy duty trucks and portable air compressors are scheduled to be promulgated in the spring of 1975. These new truck noise emission standards are to be effective for 1977 model year vehicles which will be produced in the fall of 1976; the new compressor standards will be effective in the spring of 1976. EPA enforcement of these standards will begin as soon as manufacturers notify EPA that they wish to begin production verification. Manufacturers have indicated that they desire the flexibility to verify production models before the regulations are effective. This may be as soon as they are promulgated. This verification will require evaluation and monitoring by EPA.

The strategy for enforcement of new product noise emission standards for medium and heavy duty trucks and portable air compressors, consists of a two part enforcement strategy - (1) auditing of noise emission performance of new products, and (2) production verification.

Resources requested provide for the development of an EPA standard test capability. This capability is essential to support the enforcement activities for enforcement of new products subject to noise emission standards by audit and for new product verification.

Auditing of noise emission performance of new products is a continuing audit conducted pursuant to a test request issued by EPA to determine whether manufacturers produce complying products. An EPA audit staff will be required to select the manufacturers and products to be tested, prepare the test orders, monitor compliance with the test orders, perform such confirmatory testing as may be required. take appropriate action in the case of nonconformity, and conduct investigations as necessary.

The second part of the enforcement strategy, production verification, calls for each manufacturer to verify that he possesses the required technology and ability to enable his new products to conform to the applicable noise standards. Productions verification is required at the beginning of the model year when a new model is introduced during the year or when a significant change occurs to a previously verified product. Although production verification is for the most part conducted by the individual manufacturers, EPA staff will be responsible for evaluating the production verification reports, monitoring in a selective basis production verification testing, and conducting inspections and investigations concerning manufacturers' activities as necessary.

In-Use Noise Enforcement

Under the Noise Control Act, both States and, in some respects, the Federal Government have the authority to regulate products in-use. Federal responsibility in this area extends to enforcement of Federal useful life standards through recall and warranty requirements, enforcement of the Federal prohibition against tampering, and assisting States in setting up enforcement programs for products in-use.

At the present time, no major State enforcement programs for noise sources have been developed. The Federal Government must help States to lay the groundwork for establishing such programs if there is to be adequate in-use enforcement of products subject to noise emission standards. A model State enforcement program, including model legislation, must be developed. This will require close contact with regional offices, 50 States, and many local jurisdictions.

The State programs will succeed only to the extent that they are based on a well conceived Federal program. A

Federal recall program must be established, since most States and local governments would not be able to establish a recall program on their own. In addition to a recall activity, the noise enforcement program will also require a warranty and tampering activity. Planning for the Federal in-use noise enforcement program will occur in 1976 with implementation slated for 1977.

Purpose of Increase

New Sources

The purpose of the increase in 1976 is to enforce new product noise emission standards for medium and heavy duty trucks and portable air compressors through: production verification, auditing of noise emission performance of new products, and the establishment of a standard test facility in support of these activities and to support development of the enforcement test facility.

In-Use Sources

The purpose of the increase in 1976 for in-use sources is to establish Federal recall, warranty, and tampering programs for new products in-use, and to provide direction to State and local in-use noise enforcement programs through the development of a model State enforcement program.

Noise

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Processes and Effects..	$351,000	...	-$351,000
Control Technology.....	193,900	$45,000	-148,900
Total................	544,900	45,000	-499,900
End-of-Year Employment			
Processes and Effects..	1	...	-1
Control Technology.....	2	1	-1
Total................	3	1	-2

Purpose

The noise research and development effort concentrates on coordinating the research programs of all Federal agencies in accordance with the Noise Control Act of 1972 in order to expand and improve the scientific and technical base for noise control and abatement programs.

Noise

Research and Development

Processes and Effects

	1975	1976	Change
Processes and effects...	$351,000	...	-$351,000

In support of EPA's responsibilities related to the standard setting and enforcement role of the Agency, health effects research is directed to the development and improvement of criteria which Congress has stated will be the basis for setting any noise emission standards. There are numerous gaps in knowledge and extensive areas of technical and scientific disagreements which require a research effort.

1975 Program

This year, studies are being conducted on the effects of hearing impairment from various types of noise exposure of greater than eight hour duration, and on the effects of body vibrations combined with noise on potential hearing loss. Investigations are also under way to study behavioral correlates of varying noise environments, as well as studies to explore the role of various stimuli in the adaptation of nonauditory physiological system reactions to noise. Additionally, studies are planned on response effects to time-varying noise. A symposium is scheduled to discuss the critical issues on the effects of environmental noise on hearing.

1975 Accomplishments

The health effects program was begun in 1974. There have been no significant accomplishments to date.

Purpose of Decrease

To effectively meet the research needs to support and/or revise existing environmental noise criteria and subsequent standards, a program with resources of approximately $2 million is required. Because these resources are not available and a significant research effort cannot be maintained at the present low level of funding, current noise resources could more effectively be used in another program area. It is, therefore, necessary for EPA to rely on other Federal agencies to provide noise health effects research.

Noise

Research and Development

Control Technology

	1975	1976	Change
Control technology..	$193,900	$45,000	-$148,900

From the legislative history of the Noise Control Act, and the limited funds assigned for implementing the Act, it is clear that Congress intends that EPA utilize the research and technology generated by other Federal agencies to help fulfill the provisions of the Act. Therefore, Federal noise research coordination is viewed as a major resource whereby EPA will achieve its research, development and demonstration requirements to support the regulatory and enforcement activities of the Agency.

The coordination task is extensive. Federal agencies or departments having noise research activities are Department of Transportation, NASA, Department of Defense (Army and Navy), Department of Interior, Department of Agriculture, Post Office, and the Veterans Administration. Aircraft noise control research accounts for 87 percent or more of the total Federal allocation from 1973 through 1976. Other major Federal efforts are under way in research on noise health effects, surface transportation noise control, stationary machinery noise control, and noise measurements methodology.

1975 Program

EPA has developed a program to coordinate federally sponsored noise research, development, and demonstration activities that utilizes four noise research panels: (1) aircraft, (2) surface transportation, (3) stationary machinery, and (4) noise health effects. This approach assures EPA continuing access to agencies' noise research and development programs and scientific expertise. The current program will complete an inventory of Federal noise research and development programs and the ability of these activities to satisfy environmental health and welfare goals.

1975 Accomplishments

- A plan to coordinate Federal noise research activities has been developed and intiated, and
- A preliminary inventory of Federal noise research and development has been completed.

1976 Plan

Starting in 1976, the noise program will perform only coordination of the Federal noise research program in accordance with provision of the Noise Control Act.

Purpose of Decrease

The proposed decrease reflects the consolidation of noise research and development efforts into a single coordination program, allowing an increased effort by the EPA regulatory program.

215<

Interdisciplinary

Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Research and Development			
Processes and Effects....	$17,452.9	$19,460.8	+$2,007.9
Control Technology.	1,314.6	1,315.0	+.4
Total..	18,767.5	20,775.8	+2,008.3
End-of-Year Employment			
Research and Development			
Processes and Effects...	240	240	...
Control Technology	12	12	...
Total..	252	252	...

Interdisciplinary

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Processes and Effects.........	$17,452,900	$19,460,800	+$2,007,900
Control Technology	1,314,600	1,315,000	+400
Total..........	18,767,500	20,775,800	+2,008,300
End-of-Year Employment			
Processes and Effects.........	240	240	...
Control Technology	12	12	...
Total...........	252	252	...

Overview and Strategy

It is clear that EPA is responsible for making and implementing decisions concerning the use of common property environmental resources, i.e., the air, water, wilderness, etc., and must consider the interrelationship of these resources and our social and economic wellbeing. Thus, EPA functions in many ways as an environmental manager. This function requires the use of a wide range of assessment vehicles -- theoretical, operational, and managerial. The interdisciplinary research program is designed to supply these vehicles through conduct of socio-economic research, the development of quality assurance procedures for use in regional and State programs, the development of standard setting methodologies, and the production of assessment documents on pollutants for which standards may be established.

Interdisciplinary

Research and Development

Processes and Effects

	1975	1976	Change
Processes and effects........	$17,452,900	$19,460,800	+$2,007,900

The components of this program are socio-economic research, minority institutions research support, monitoring, the National Center for Toxicological Research, program integration, and the Science Advisory Board.

A program of research grants to minority institutions in the area of environmental research is conducted by EPA. Minority institutions which have or can develop capability to conduct effective environmental research are actively sought, assisted in preparation of grant applications, and encouraged to submit them.

The Office of Monitoring Systems has the responsibility for development and demonstration of new monitoring methods and instrumentation. Improved technical data and information systems are required to satisfy Agency monitoring data needs in the most effective manner. There is also a quality assurance program to maintain uniform, scientifically correct analytical methods and assure and document the satisfactory use of those methods throughout EPA's numerous laboratories. In addition, it provides technical assistance in the remote conventional and contingency monitoring areas.

The National Center for Toxicological Research is being funded jointly by the Food and Drug Administration and EPA as a national facility to study the long-term effects of low doses of chemical toxicants. Past research efforts associated with these toxicants has been concentrated on high doses and their effects on man. Concern has arisen in the scientific community regarding the possibility that much more severe damage to man and the environment may be occurring through low dose exposure to toxicants over a long period of time. Research must be undertaken to evaluate such cumulative, low dosage effects.

The Office of Program Integration was established to assure that research and engineering strategies and programs provide maximum responsiveness to Agency goals. This activity also includes the coordination and preparation of reports on criteria, guidelines, and standards and the preparation of other special reports.

The Science Advisory Board was established to provide a strong, direct link between EPA's Administrator and the scientific community. The Science Advisory Board functions to provide independent reviews, to render advice on EPA's major scientific programs, and to perform special tasks and program review assignments for EPA. This Board also provides advice on broad scientific and policy matters, on new emerging environmental problems, and assesses the results of specific research efforts to solve these problems.

1975 Program and Accomplishments

Minority Institutions Research Support (MIRS)

MIRS provides assistance to minority institutions in utilizing their environmental research capabilities. Program efforts are directed to identifying their potential and awarding grants to develop their research capabilities. The 1975 program supports 10 to 12 new projects.

Socio-economic Research

This effort is directed to development techniques for setting environmental quality standards, preparation of technical materials for standardizing EPA review of environmental impact statements, and development of precise mechanisms to quantify effects of investments on highway and wastewater treatment facilities. Additionally, work advanced toward completion of Phase III of the strategic environmental assessment system (SEAS) which will be used for long-range comprehensive analysis. The research program also assumed responsibility for preparation of the congressionally mandated 1975 "Cost of a Clean Environment Report."

Monitoring

There are many active projects in the quality control area. These include completion of first phases of on-site evaluation of EPA regional laboratories and selected State laboratories; the first step in expansion of quality control procedures to cover State monitoring laboratories; completion of phase one of a series of performance evaluations (analyses of standard samples) of EPA and State facilities with respect to their routine analyses of air, water, pesticides, and radioactivity samples; development of quality control manuals for pesticide residues and radiochemical analyses; completion of the feasibility study of EPA certification of environmental monitoring laboratories; completion of projects to fully automate (using mini-computers) three EPA laboratories; and completion of a time-shared laboratory data management system at two regional laboratories.

In the area of methodology, active projects include validation of ambient air and stationary source measurement methods specified in Federal Regulations, evaluation of five measurement methods for analyses of water and wastewater, determination of equivalent methods for ambient air analyses as required by regulation, field testing and evaluation of commercially available ambient air instrumentation, and the design of an airborne laser pollutant measurement system.

Efforts in technical support include the analysis of 2,000 samples associated with the national fuel and fuel additive network, monitoring of sulfate background levels, continuing support of the World Meteorological Organization particulate studies, rural ozone studies and monitoring of CO in connection with transportation control strategies, and the provision on a regular basis of a photo interpretation capability in support of regional and other monitoring activities.

Contingency monitoring assistance indicated vinyl chloride to be an environmental problem, and demonstrated that acid mist from the Vulcanus burning of chloride-containing wastes was not a significant environmental problem.

Reports will be prepared on the subjects of nonpoint source pollution, groundwater monitoring, and biological indicators. An Agency plan will be developed in cooperation with the Department of the Air Force for the use of a sophisticated data and information storage and retrieval system in support of monitoring activities.

National Center for Toxicological Research (NCTR)

The program at NCTR is a long range effort involving animal testing over extended periods and maintenance of a pathogen-free environment with associated chemical and microbiological facilities. Included in the on-going programs are low-dose two year chronic studies in "barrier systems," additional chronic studies in conventional animal rooms and mutagenic research involving assay techniques and methodology development. During this year, it is also planned to complete the 2, 4, 5-T multidisciplinary study, expand teratological dose-response experiments and complete protocol development efforts.

In the maintenance program, important efforts are establishment of pathology capability to accommodate 750 mice per week preparation of pathogen-free animal feed which is chemically defined and uniformly mixed with very low levels of test chemicals.

Program Integration

In program integration, the primary objective is completion of development of integrated media strategies for the Office of Research and Development.

1976 Plan

Minority Institutions Research Support

The grant program will be continued at the 1975 level.

Socio-economic Research

The 1976 effort is concentrating research in five areas: (1) Continued development of comprehensive analysis techniques (the SEAS program) but with greatly increased stress on application; (2) Work on the benefits of EPA programs with the air and water results being incorporated into comprehensive new versions of "Cost of Clean Air and Cost of Clean Water"; (3) Continued land-use work leading to practical guidelines and manuals for implementation of integrated Air Quality Maintenance and Section 208 Regulations; (4) An assessment of the practicality of finding and implementing economically more efficient means of meeting environmental ambient standards; and (5) Work to define the problems of secondary impacts and to discover technical and managerial measures to avoid them.

Monitoring

There will be a continued effort on interlaboratory performance tests, validation of new methods for determining air pollutants, including sulfates in automobile exhausts; on-site performance evaluation of EPA regional and State monitoring laboratories; data screening quality control for an EPA data system; and demonstration of advanced airborne systems.

Instrumentation work includes the development of a detector for airborne mercury and methodology for the measurement of sulphur in low sulphur fuels. Mercury is one of three air pollutants designated as hazardous and to be closely controlled. Sulfur measurement procedures are required in the identification of fuels that can be burned with minimum pollution control requirements.

In the general monitoring area, monitoring network optimization guides and overhead monitoring techniques will be developed.

National Center for Toxicological Research (NCTR)

The plan for 1976 is a continuation of the 1975 program. Because the fundamental basis for toxicological research is long-term, the program is extended beyond a single year. The program details have been included above in the discussion of the 1975 program. A new objective has been added involving inhalation studies of toxic substances of interest to EPA.

Program Integration

The effort for 1976 will be directed to establishing procedures and coordinating the development of scientific technical assessment reports, updating the media strategies of the Office of Research and Development and continuing coordination of the integrated research and development program with other EPA programs.

Purpose of Increase

National Center for Toxicological Research (NCTR)

The potentially adverse effects of long-term, low level exposure to air pollutants are not currently being studied. The work at NCTR will be expanded to study these effects and fill a crucial information need of the Agency by establishing an inhalation toxicology capability. Current inhalation toxicology capability is limited to exposing relatively small numbers of animals with the result that only gross effects (frequently occurring) are detectable. The operation of this inhalation capability requires a budget increase of $2.0 million.

Interdisciplinary

Research and Development

Control Technology

	1975	1976	Change
Control technology..	$1,314,600	$1,315,000	+$400

This activity supports EPA's technology transfer program. In the coming decade, billions of dollars will be invested in the construction of pollution control, water quality, waste management, and resource recovery facilities. The objective of the technology transfer program is to ensure that the latest viable technologies are transferred to potential users. The technology transfer program is designed to bridge the gap between research and full-scale use by evaluating and transferring newly developed successful technology to industries, consulting engineers, municipal and State design engineers, administrative decision makers, and others exerting influence over the design and construction of pollution control, water quality, waste management, and resource recovery facilities.

1975 Plan and Accomplishments

The technology transfer program will have conducted 25 seminars on various aspects of pollution control technology, developed design manuals for a variety of technologies, and distributed over 250,000 publications of various degrees of technical complexity.

1976 Plan

The 1976 program will concentrate on disseminating information via seminars and manuals. The number of seminars already developed in the municipal and industrial sectors will be increased and new ones conducted in the area of stationary source air pollution control technology, industrial control processes, air monitoring, nonpoint source pollution, ground water quality, land disposal of effluents and sludges, and solid waste management and resource recovery.

Municipal wastewater treatment design manuals, industrial pollution control process design manuals, and industrial technology status manuals will be prepared covering such subjects as land disposal of effluents and sludges, individual home waste treatment and disposal, combined flow treatment, solid waste management, resource recovery, ion exchange, carbon absorption, reverse osmosis, NO_x and SO_x control, fine particulate control, nitrogen control, pollution control in the pulp and paper industry, power industry, and air monitoring. Publications will also be prepared on other areas of pollution control and water supply.

Toxic Substances

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control.......	$6,838,200	$6,850,300	+$12,100
Research and Development...	1,208,600	1,209,000	+400
Total......	8,046,800	8,059,300	+12,500
End-of-Year Employment			
Abatement and Control.......	45	45	...
Research and Development...	11	11	...
Total......	56	56	...

Overview and Strategy

Today there are more than 20,000 chemical substances being produced in the United States for commercial purposes, with 500 to 700 new chemicals introduced into the marketplace each year. Of this number about 80 percent are toxic under some conditions, and about 1.5 percent are sufficiently hazardous to cause environmental concern. A number of these chemical compounds, such as vinyl chloride, arsenic, polychlorinated biphenyls, asbestos, and others, have been involved in incidents which have created widespread public attention. These factors and othersled EPA to create its toxic substances program.

EPA's current toxic substances program is carried on under the authorities granted in the Agency's major legislative mandates, such as the Clean Air Act, the Federal Water Pollution Control Act, and other authorities. Major program activities include development and coordination of Agency efforts under these authorities addressed to the problems of toxic materials which cross traditional media lines, use and development of predictive techniques for early warning in identification of substances most likely to pose a hazard to man or the environment, implementation of methods for monitoring air, water, and soil for selected toxic chemicals, and development of control strategies for multimedia toxic pollutants. Research is being conducted into the health effects of selected toxic substances and their metabolites to provide data on chemicals of current concern and provide background to support future regulatory efforts.

EPA will continue to deal with toxic substance problems by relying on other legislative authorities, either singularly or in combination, to mitigate as much of the hazard as possible. In addition, the Agency is increasingly encouraging the major chemical producers and processors to take more substantive voluntary steps to reduce chemical risks and contribute to environmental goals.

Summary of Increases and Decreases

1975 Toxic Substances Program	$8,046,800
Abatement and Control	+12,100
The increase requested will support the full-year cost of the October 1974 pay raise.	
Research and Development	+400
This increase is required for a minor adjustment in personnel compensation and benefits.	
1976 Toxic Substances Program Request	8,059,300

Toxic Substances

Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control			
Standards and Guidelines..	$6,838.2	$6,850.3	+$12.1
Research and Development			
Processes and Effects.....	1,208.6	1,209.0	+.4
Total...	8,046.8	8,059.3	+12.5
End-of-Year Employment			
Abatement and Control			
Standards and Guidelines..	45	45	...
Research and Development			
Processes and Effects.....	11	11	...
Total...	56	56	...

Toxic Substances

Abatement and Control

	1975	1976	Increase or Decrease
Budget Authority			
Standards and Guidelines.	$6,838,200	$6,850,300	+$12,100
Total..................	6,838,200	6,850,300	+12,100
End-of-Year Employment			
Standards and Guidelines.	45	45	...
Total..................	45	45	...

Purpose

The primary goal of the toxic substances abatement and control program is to reduce the danger to man and the environment posed by toxic substances. EPA plans to achieve this goal without placing needless burdens on industry. Accordingly the toxic substances program is designed to reduce the probability of incidents harmful to health or the environment resulting from toxic substances. Program activities are directed to: clarification of the risks to health and the environment associated with the manufacture, distribution, use, and disposal of new and existing chemical substances, with particular regard to chemical properties, production levels and trends, and exposure of the chemicals to man and the environment; more effective utilization of regulatory authorities and related tools available to the Agency to mitigate such risks, taking into account the economic and social impact of restrictions on toxic substances; and increasing the concern of and appropriate actions by the chemical and related industries to reduce risks to health and the environment associated with their activities.

1975 Program

The following activities are being pursued in 1975:

- New Approaches to Testing: This activity emphasizes encouraging increased industrial concern and appropriate actions in testing both new and existing chemicals entering commerce. Particular interest centers on those chemicals for which there are inadequate data concerning environmental risks but which are suspected of posing a hazard.

- Environmental Prediction: This early warning activity is directed to identifying and prioritizing previously unsuspected chemicals entering the environment which are most likely to pose a hazard in the near future.

- Data System: This activity will improve the ready availability in a usable form of authoritative information concerning the manufacture, use, distribution, and disposal of chemical substances. This information base will assist in identifying those new chemical substances entering commerce which deserve in-depth analyses to determine whether they pose a threat.

- Strategy Development and Coordination: This effort emphasizes identification of interrelationships and common purposes of toxic substances; regulatory strategies and standards required under different authorities; multiple applications and transferability of principles used in setting standards on the same or similar substances under different authorities; and multiple sources of the same toxic substances, their accumulation in different media, their routes through the environment, and their pathways to human exposure. Also of concern is the interface between EPA activities and the authorities and interests of other agencies, including FDA, OSHA, NCI, and CPSC.

- Response to Crises: Significant resources will continue to be committed to coordinating EPA responses to crises involving toxic substances that unexpectedly occur throughout the country.

- Chemical and Economic Assesment: EPA analyses classes of chemicals as the basis for determining the risks associated with new products in these classes which are likely to appear on the market in the near future. Central to consideration of options is the balancing of risks and benefits.

1975 Accomplishments

- Initiation of action programs to clarify and reduce the risks associated with several highly toxic chemicals and substances (e.g. asbestos, vinyl chloride and polyvinyl chloride); and

- Response to crises involving such toxic chemicals as vinyl chloride, conduct of monitoring to establish the scope and magnitude of the problem, and suggestion of means for mitigating or eliminating the hazards involved.

1976 Plan

- Continue review and evaluation of testing methods;
- Continue development of criteria and techniques for early warning through identification of toxic substances which may pose a hazard;
- Complete development of a data system that will enable quick identification on chemicals of concern;
- Continue response to crises involving toxic substances; and
- Begin analysis of chemical classes as the basis for determining the risks associated with new products.

Purpose of Increase

The requested increase will support the full-year costs of the October 1974 pay raise.

Toxic Substances

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Processes and Effects........	$1,208,600	$1,209,000	+$400
Total.........	1,208,600	1,209,000	+400
End-of-Year Employment			
Processes and Effects........	11	11	...
Total.........	11	11	...

Purpose

This program supports EPA's Office of Toxic Substances by carrying out research on the effects of toxic substances and their metabolites on human health and the ecosystem. Protocols for testing substances to determine the potential hazard of their release into the environment are developed. Information is needed on the transport and persistence of toxic substances as well as their ecological and health effects. Analytical chemistry methods are being developed to measure and identify these pollutants.

Toxic Substances

Research and Development

Processes and Effects

	1975	1976	Change
Processes and effects...	$1,208,600	$1,209,000	+$400

A program of research on the effects of toxic substances and their metabolites on human health is essential to support the activities of EPA's Office of Toxic Substances. Protocols for premarket testing of toxic substances must be established and validated, and criteria must be established for deciding which toxic substances should be declared hazardous to human health.

A program to determine the ecological processes and effects of pollutants designated as toxic substances is under way. Data are collected to provide a sound scientific basis for the establishment of water quality standards for such uses as public water supply, recreation, fish and wildlife propagation, agricultural supply and industrial purposes. Information is developed to relate the concentration, form, transport processes, and acute and chronic effects of toxic substances to the size, character, composition, and location of these sources.

1975 Program

An evaluation of the hazards of human contact with toxic substances is being implemented by conducting animal toxicology studies of specific compounds. The development of laboratory methods for toxicological screening of toxic substances to identify which compounds are likely to persist in the environment or have adverse effects on man or aquatic and terrestrial life is being conducted. To evaluate mammalian effects, a variety of tissues are exposed to the compounds. To evaluate ecological effects, the compounds are tested in model ecosystems designed to study specific characteristics.

1975 Accomplishments

- Discovered in a chronic feeding study that hexachlorobenzene accumulates to more toxic levels in the second generation than the first generation of animals;

- Discovered that cadmium is a moderately strong agent in inducing birth defects; and

- Published an interim analytical method for asbestos in water.

1976 Plan

- Toxicology studies on substances of current interest will be continued, as will development of screening methods by which toxic substances can be identified. In addition, studies of the sources, transport, and biological effects of toxic substances in terrestial ecosystems are being planned. Another significant objective planned for 1976 is completion of the design of an automated analytical method for asbestos in water and development of sampling techniques.

Purpose of Increase

This increase is required for a minor adjustment in personnel compensation and benefits.

Program Management and Support

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control......	$31,529,800	$35,975,600	+$4,445,800
Enforcement....	13,425,800	15,643,900	+ 2,218,100
Research and Development..	18,587,300	18,536,400	- 50,900
Total......	63,542,900	70,155,900	+6,613,000
End-of-Year Employment			
Abatement and Control......	197	195	- 2
Enforcement....	149	169	+20
Research and Development..	217	177	-40
Total......	563	541	-22

Overview

This media encompasses the overall management and support of the action oriented programs described in the foregoing media sections. Resources for the Assistant Administrators, their principal deputies, office directors and their immediate staffs are provided directly through the Program Management and Support media, rather than through charges to each of the program media. Management functions covered include the development of program policies and strategies, planning of media activities, monitoring and review of program performance, including that performed in the regions, and the direction of program activities carried out in headquarters. In the enforcement area, program management also includes the staffing and funds for EPA's Office of General Counsel at headquarters and Offices of Regional Counsel in the ten regions.

Basic support services provided to all Agency functions are managed centrally and charged back to each appropriation on a prorated basis. The program support subactivity in each appropriation includes that portion of costs required to support the programs conducted and funded under the appropriation. Specific descriptions of support services and proposed changes for 1976 are included in the section on Agency and Regional Management.

Summary of Increases and Decreases

1975 Program Management and Support.......	$63,542,900
Abatement and Control..................	+ 4,445,800
Program Support - see Agency and Regional Management	
Enforcement...........................	+ 2,218,100
Program Management. An increase of 25 positions is required for the Office of General Counsel and Offices of Regional Counsel which will be somewhat offset by a decrease of 5 water enforcement support positions. The growing number of grants, contracts, and similar documents requiring legal review and increased litigation have produced a rapidly growing workload.	
Program Support - +1,772,700. See Agency and Regional Management.	
Research and Development..............	- 50,900
Program Support - see Agency and Regional Management.	
1976 Program Management and Support Request	70,155,900

Program Management and Support

Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Abatement and Control			
Program Management....	$6,163.9	$6,398.0	+$234.1
Program Support.	25,365.9	29,577.6	+4,211.7
Subtotal..	31,529.8	35,975.6	+4,445.8
Research and Development			
Program Management....	6,987.5	4,876.5	-2,111.0
Program Support.	11,599.8	13,659.9	+2,060.1
Subtotal..	18,587.3	18,536.4	-50.9
Enforcement			
Program Management...	3,859.7	4,305.1	+445.4
Program Support	9,566.1	11,338.8	+1,772.7
Subtotal..	13,425.8	15,643.9	+2,218.1
Total...	63,542.9	70,155.9	+6,613.0
End-of-Year Employment			
Abatement and Control			
Program Management....	197	195	-2
Program Support.	...	...	...
Subtotal..	197	195	-2

	1975	1976	Increase or Decrease
Research and Development			
Program Management....	217	177	-40
Program Support.	...	...	...
Subtotal..	217	177	-40
Enforcement			
Program Management....	149	169	+20
Program Support.	...	...	...
Subtotal..	149	169	+20
Total.	563	541	-22

Program Management and Support

Abatement and Control

	1975	1976	Increase or Decrease
Budget Authority			
Program Management....	$6,163,900	$6,398,000	+$234,100
Program Support.......	25,365,900	29,577,600	+4,211,700
Total.......	31,529,800	35,975,600	4,445,800
End-of-Year Employment			
Program Management....	197	195	-2
Program Support.......	...	...	...
Total.......	197	195	-2

Purpose

This subactivity provides the resources for management and support services required for each of the media programs funded through the Abatement and Control appropriation.

Program Management and Support

Abatement and Control

Program Management

	1975	1976	Change
Program management..	$6,163,900	$6,398,000	+$234,100

This subactivity provides for the overall management of the Office of Air and Waste Management and the Office of Water and Hazardous Materials, including program planning, policy and strategy development, performance monitoring and review (including those portions of the program carried out in the ten regional offices), and direction of headquarters activities. To carry out these functions, managerial positions are provided to each office as follows:

	1975	1976
Office of Air and Waste Management	37	37
Office of Air Quality Planning and Standards......................	11	11
Office of Mobile Sources Air Pollution Control.............	13	14
Office of Solid Waste Management Programs......................	9	9
Office of Radiation Programs.....	25	25
Office of Noise Abatement and Control......................	8	8
Total, Office of Air and Waste Management..................	103	104
Office of Water and Hazardous Materials.....................	31	31
Office of Water Programs Operations	6	3
Office of Water Planning and Standards.....................	8	8
Office of Pesticides Programs....	38	38
Office of Toxic Substances.......	5	5
Total, Office of Water and Hazardous Materials.........	88	85

Another six positions and $173,500 are provided to the Intergovernmental Relations Division of the Office of Legislation. This Division provides liaison and coordination with State, interstate, and local government organizations.

Purpose of Increase

This increase represents the full-year cost of the October 1974 pay raise as well as a transfer of funds between accounts.

Program Management and Support

Abatement and Control

Program Support

	1975	1976	Change
Program support.....	$25,365,900	$29,577,600	+$4,211,700

This subactivity includes the prorated share of EPA's total funding requirements of common support services. These funding requirements cover certain agency wide and regional leases, communications, and other common service costs which are managed through a single headquarters and ten regional accounts. These requirements are fully described in the section covering Agency and Regional Management. The prorated share charged under this element represents that portion required to support the programs funded and conducted under the Abatement and Control appropriation account.

Purpose of Increase

This increase, together with those under similar elements in the Research and Development and Enforcement appropriation accounts, are described under the section covering Agency and Regional Management.

Program Management and Support

Enforcement

	1975	1976	Increase or Decrease
Budget Authority			
Program Management....	$3,859,700	$4,305,100	+$445,400
Program Support.	9,566,100	11,338,800	+1,772,700
Total.....	13,425,800	15,643,900	+2,218,100
End-of-Year Employment			
Program Management....	149	169	+20
Program Support.	...	...	...
Total.....	149	169	+20

Purpose

This activity encompasses the overall management and support of media programs funded through the Enforcement appropriation. It also provides for the staffing and funding of EPA's Office of General Counsel in headquarters and the Office of Regional Counsel in the 10 regions.

244<

Program Management and Support

Enforcement

Program Management

	1975	1976	Change
Program management..	$3,859,700	$4,305,100	+$ 445,400

This subactivity provides for overall management of the Office of Enforcement, including the development of program policies and strategies, the overall planning of enforcement activities, the monitoring and review of the program, including those activities performed in the regions, and the direction of the program activities performed in headquarters. It also covers the staffing of the Offices of General Counsel and Regional Counsel which serve the legal needs of all components of the Agency. Furthermore, this activity is responsible for overseeing the achievement of management-by-objective (MBO) items which involve enforcement activities and through legal review contributes to the improved management of the construction grants program.

To carry out these functions, positions are allocated as follows:

	1975	1976
Office of Assistant Administrator for Enforcement..	31	26
Office of Water Enforcement.....	5	5
Office of General Enforcement...	4	4
Office of General Counsel.......	72	77
Office of Regional Counsel......	37	57
Total.................	149	169

Purpose of Increase

The requested increase is to provide for additional staff for the Office of General/Regional Counsel to meet the increased workload of expanding Agency programs and new and existing legislation, examples of which include:

- More stringent legal review of the expanded number, dollar volume, and complexity of construction grants which are a result of the creation of the multi-step construction grant process and more detailed statutory requirements;

- Significant legal review of environmental impact statements required for these grants;

- Increased grants-connected litigation due to growing number of grant awards;

- Increased legal work in the area of indirect source review required under the Clean Air Act;

- Litigation related to the Clean Air Act and permit issuance activities under the Federal Water Pollution Control Act (FWPCA), as amended;

- Expanded legal support resulting from the re-registration of 35,000 existing pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act;

- Litigation involving at least 30 of the effluent guidelines under the FWPCA;

- Expanded legal activity involved in the administration of the new energy legislation;

- Substantial legal supervision in the preparation of environmental impact statements;

- Significant litigation and legal review of toxic pollutant standards;

- Increased workload in the area of review of new legislation, particularly concerning toxic substances and drinking water;

- Increased workload due to the administrative penalties and public hearings requirements of the pesticides and water legislation; and

- The legal review needed for the standards and regulations required under the pesticides and water legislation.

The 1976 request reflects the growing role and importance of the Offices of Regional Counsel. As EPA has moved to decentralize its many activities, the Regional Administrator has looked to his Regional Counsel for legal support. This is particularly true in the construction grants program where legal review of grant documents is critical. As the grant program has grown in size and complexity, so has the resultant Agency responsibility for adequate overview. Another area of related concern in 1976 is the legal review of environmental impact statements related to grant issuance. Litigation activity is also expected to increase in 1976 related to the construction grant program, the permit issuance process, the adequacy of effluent guidelines and decisions as to the need to prepare environmental impact statements.

Program Management and Support

Enforcement

Program Support

	1975	1976	Change
Program support..	$9,566,100	$11,338,800	+$1,772,700

This activity constitutes the prorated share of EPA's total funding requirements for common support services. These funding requirements cover certain agencywide and regional leases and communication and other common service costs which are managed through the Agency and Regional Management account. The prorated share charged under this element represents that portion required to support the programs funded and conducted under the Enforcement appropriation account.

Purpose of Increase

This increase, together with those under similar elments under the Abatement and Control and Research and Development appropriation accounts, are described under the section covering Agency and Regional Management.

Program Management and Support

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Program Management....	$ 6,987,500	$ 4,876,500	-$2,111,000
Program Support.	11,599,800	13,659,900	+ 2,060,100
Total.......	18,587,300	18,536,400	-50,900
End-of-Year Employment			
Program Management....	217	177	-40
Program Support.	...	...	...
Total.......	217	177	-40

Purpose

This activity provides the resources for management and support services required for each of the media programs funded through the Research and Development appropriation.

Program Management and Support

Research and Development

Program Management

	1975	1976	Change
Program management....	$6,987,500	$4,876,500	-$2,111,000

Resources for the overall management of the Office of Research and Development, including the four National Environmental Research Centers and the Washington Environmental Research Center are provided through program management. These functions include development of program policies and strategies, overall planning of research and development activities, monitoring and review of program performance, and direction of the program activities performed in headquarters and the Research Centers. This activity also provides for the regional research representative and staff in each of the 10 regional offices.

To carry out these functions, positions are allocated as follows:

	1975	1976
National Environmental Research Center, Durham.....................	17	12
National Environmental Research Center, Las Vegas..................	14	11
National Environmental Research Center, Corvallis..................	22	17
National Environmental Research Center, Cincinnati.................	30	24
Office of Research and Development....	92	71
Regional offices......................	42	42
Total...........	217	177

Purpose of Decrease

Reorganization plans currently being developed are pointed at reducing the amount of effort expended on overall management within the Office of Research and Development. More effective use of manpower is the aim of the new plans. More effective utilization will result in less demand for pure overhead activities, allowing the indicated reduction of $2 million and 40 positions.

Program Management and Support

Research and Development

Program Support

	1975	1976	Change
Program support..	$11,599,800	$13,659,900	+$2,060,100

This subactivity includes the prorated share of EPA's total funding requirements for common support services. These funding requirements cover certain agencywide and regional leases, communications, and other common service accounts. These requirements are fully described in the section covering Agency and Regional Management. The prorated share charged under this element represents that portion required to support the programs funded and conducted under the Research and Development appropriation account.

Purpose of Increase

This increase, together with those under similar elements in the Abatement and Control and Enforcement appropriation accounts, are described under the section covering Agency and Regional Management.

Energy

Research and Development

	1975	1976	Increase or Decrease
Budget Authority			
Processes and Effects..........	$53,000,000	$47,000,000	-$6,000,000
Control Technology	81,000,000	65,000,000	-16,000,000
Total..........	134,000,000	112,000,000	-22,000,000
End-of-Year Employment			
Processes and Effects..........	...	22	+22
Control Technology	...	18	+18
Total..........	...	40	+40

Purpose

The purpose of the EPA energy-related research and development program is the development of a sound technical and scientific basis for ensuring (1) adequate protection of human health, welfare, ecosystem, and social goals; (2) environmental protection necessary to facilitate the use of energy supplies, with particular emphasis on domestic fuels; (3) implementation of energy system initiatives without delays caused by inadequate and insufficient environmental impact data; (4) development of appropriate cost-effective control technologies for emerging energy systems; and (5) assessment of the environmental implications of energy conservation measures in order to maximize the energy savings and minimize the associated adverse impacts.

Energy Research and Development

Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Energy Research and Development			
Processes and Effects.....	$53,000.0	$47,000.0	-$6,000.0
Control Technology..	81,000.0	65,000.0	-16,000.0
Total...	134,000.0	112,000.0	-22,000.0
End-of-Year Employment			
Energy Research and Development			
Processes and Effects.....	...	22	+22
Control Technology..	...	18	+18
Total...	...	40	+40

Energy

Research and Development

Processes and Effects

	1975	1976	Change
Processes and effects.........	$53,000,000	$47,000,000	-$6,000,000

The processes and effects program is designed to determine the environmental effects associated with energy extraction, transmission, conversion, and use so that measures can be taken in a timely manner to protect human health and welfare, the ecosystem, and social goals. Identification of the pollutants released by energy related industrial operations and determination of their impact on the human and natural environment will define the environmental control requirements for the polluting operations. The program will extend and strengthen the scientific basis of the Agency's regulatory policies and programs.

Energy related environmental processes and effects R&D is composed of four general subactivities: (1) health effects; (2) freshwater, marine, and atomospheric/terrestrial ecological processes and effects; (3) pollutant identification, measurement, and monitoring; and (4) policy and implementation research.

1975 Program

The health effects program is designed to identify and assess the health implications of various options for producing energy, including the processes of fuel extraction, conversion, and combustion, as well as energy conservation.

The watershed ecological processes and effects program is designed to provide ecological information so that environmentally sound decisions can be made relative to various energy development options. Specific pollutant oriented studies and broader energy technology oriented studies are designed to determine the total impact on the freshwater ecosystem of various energy development activities. Objectives include determining the transport and fate, in fresh surface waters and groundwaters, and the effects on freshwater ecosystems, of organic and inorganic pollutants, dissolved and suspended solids, complex effluents, and thermal discharges from energy related activities. The major energy technologies to be addressed are limited to oil shale and coal development and extraction, and coal gasification and liquefaction.

The marine ecological processes and effects program is designed to establish the background levels of relevant contaminants in both organisms and habitats. Funding levels will limit study to one major geographic area offshore of the eastern United States. In this area, deepwater ports and oil rigs will be located in adjacent sites, allowing for streamlined sampling. The program is designed to determine the effects on marine organisms and ecosystems of electrical power plants, petroleum extraction and conversion operations, and construction of deepwater ports.

The atmospheric/terrestrial processes and effects program is designed to determine the transport and effects of pollutants generated from various energy activities. Technologies to be considered are limited to oil shale, coal combustion, coal extraction, and coal gasification and liquefaction. The major emphasis in the area of air transport research will be to determine the chemical/physical processes associated with the conversion of sulfur and nitrogen oxides to sulphates and nitrates, and photochemical oxidant transport. Work in the terrestrial area will focus on the ecological impact of oxidants and toxic metals. The current program in the air/terrestrial area is oriented toward the study of air transport and transformation of energy derived pollutants and the transport and effects of these pollutants in terrestrial ecosystems.

The pollutant identification, measuring, and monitoring program in 1975 will (1) accelerate the development of new and improved sampling and analytical methods and instrumentation for measuring pollutants and hazardous substances associated with energy related developments, including methods and instruments for air, water, and solid waste, and (2) identify, measure, and monitor those pollutants associated with development of the national energy research and development plan.

The policy and implementation research program will develop comprehensive environmental protection standards for energy production activities, attempting to balance the environmental and economic costs. The comprehensive evaluation of environmental, economic, and social consequences of energy alternatives is used as a basis for EPA policy formulation.

1975 Accomplishments

Health Effects

- Commence studies to determine health implications of fossil fuel extraction and conversion, including studies on air and water pollution effects resulting from coal liquefaction and gasification activities;

- Conduct epidemiological and toxicological studies to expand existing knowledge on the spectrum of response associated with exposure to pollutants produced by fossil and waste fuel combustion;

- Initiate further studies to assess potential health hazards associated with mobile source emissions, including studies on selected fuels, fuel additives, advanced engine designs, and emission control systems;

- Conduct studies to identify the carcinogenic potential of air and water contaminants resulting from energy production operations;

- Develop screening systems to determine potential damage repair and protection mechanisms in biological systems; and

- Conduct studies to determine health hazards associated with deteriorated air quality inside buildings resulting from energy conserving equipment and structural design.

Watershed Ecological Effects

- Determine the types and amounts of organic and inorganic pollutants, metals, complex effluents, dissolved and suspended solids and dissolved gases which may potentially impact the freshwater environment due to increases in coal production, oil shale development, oil and gas extraction, and coal gasification and liquefaction;

- Review existing literature on freshwater ecosystem response to anticipated stresses caused by increases in coal production, oil shale development, oil and gas extraction, and coal gasification and liquefaction;

- Identify areas for development of additional offshore oil drilling activities, construction of oil refineries, power plants and supertanker ports in the coastal zone;

- Develop detailed work plans for evaluation of environmental impact at selected zones which will experience energy development; and

- Initiate surveys at selected sites to establish ambient concentrations of potential pollutants and augment historical data to provide insight to the variability of environmental conditions.

Atmospheric/Terrestrial Ecological Effects

- Provide scientific reports summarizing the current scientific knowledge for predicting chemicals/physical generation, transport, and removal of sulfates and nitrates from stationary source plumes in areas of both simple and complex terrain;

- Preliminary reports on atmospheric effects including visibility reduction, haze and radiation balance due to airborne aerosols generated by energy related activities;

- Initiate field program to determine mass balances of pollutants contained within the air envelope encompassing fuel conversion systems such as coal liquefaction and gasification;

- Document air pollution climatologies for the United States and include major atmospheric parameters that descrive dilution and depletion of air pollutants;

- Initiate studies to describe pollutant removal from the atmosphere by dry deposition and washout/rainout;

- Determine the potential consequences to weather and climate due to the emissions of pollutants, heat, and moisture from energy related activities;

- Develop predictive capability to forecast air pollution potential in advance of adverse conditions;

- Determine the effect of energy related air pollutants on important materials; and

- Determine biological, physical, and chemical pathways and transfer mechanisms of energy derived pollutants through soils, economic crops and animals.

Pollutant Identification, Measuring, and Monitoring

- Development of a compact, portable x-ray fluorescence instrument to monitor sulfur in particulate emissions from power plants;

- Development of particulate sampling train for determining three-size fractions in particulate emissions from power plants;

- Development of advanced power plant emissions sampling system; and

- Comparison of instrumental methods for determining the chemical forms of nitrogen and sulfur compounds in ambient particulate from fossil fueled power plants.

Policy and Implementation Research

- Develop method for evaluation of environmental and health effects of alternative fuel cycles, especially coal and nuclear fission, and the application of this work to alternative energy sources;

- Develop method for preliminary assessment of social and economic consequences of alternative fuel cycles and related pollution control requirements with specific attention to energy costs and health benefits of alternate energy sources. Particular attention will also be paid to energy conservation potentials and their economic and social consequences;

- Assessment of secondary SO_2 standards against the requirements for clean air and alternative energy sources; and

- Assessment of long-range requirements for thermal pollution control and the alternatives available related to energy and other resource costs.

1976 Plan

The health effects plan for 1976 continues needed research on the health implications of new and advanced technologies and conservation measures. In addition, fossil fuel and waste combustion technologies will require new effects assessment and information. Specifically, the plan includes:

- Expansion and acceleration of health effects studies on fossil and waste fuel combustion, extraction, and conversion;

- Continuation of studies to obtain health intelligence on mobile source emissions, including those from advanced engine designs and studies on emission control technology;

- Initiate studies to determine health implications of new and advanced energy technologies, including solar, geothermal, and nuclear processes;

- Conduct of epidemiological and toxicological studies emphasizing long-term, low level pollutant exposures to determine potential teratogenic, mutagenic, and carcinogenic effects; and

- Expansion and acceleration of health effects studies related to energy conserving methods and procedures in buildings.

The 1976 ecological processes and effects program incorporates specific pollutant oriented studies with broader energy technology oriented studies designed to determine the total ecological effect of various energy development options. The program is ecosystem oriented and can be subdivided into watershed ecosystem, atmospheric/terrestrial and marine problem areas. In the 1976 watershed ecosystem program, energy technologies to be addressed are limited to oil shale and coal development and extraction and coal gasification and liquefaction. Specific plans include:

- Determine acute toxicity to freshwater organisms for most critical organic and inorganic pollutants, metals, complex effluents, dissolved and suspended solids and dissolved gases derived from increases in coal production oil shale development, oil and gas extraction and coal gasification and liquefaction;

- Determine primary transport mechanisms and pathways in fresh surface and groundwaters of organic and inorganic pollutants, metals, and dissolved and suspended solids derived from increased coal production; and

- Begin baseline evaluation of aquatic ecosystems associated with western coal development and oil shale development.

The 1976 marine ecological processes and effects program is limited to a study of a single geographical area. Baseline data will be developed in cooperation with other agencies to study the impact of deepwater ports, floating nuclear power plants, and offshore oil drilling. Current plans are designed specifically to utilize other agencies' ships already engaged in support sampling to establish a thorough baseline community assessment and background levels of relevant contaminants in organisms and habitats. Specific plans include:

- Initiation of a time-series research program relative to ecosystem variability, transport processes (atmospheric and water), pollutant fluxes, pollutant distribution, concentration, accumulation, and dispersion;

- Development from time-series data, of preliminary ecosystem and hydrodynamic models related to transport diffusion processes; and

- Evaluation of first phase research results on activity in petroleum hydrocarbons, trace metals, thermal effects, and power plant effluents, with regard to physical, chemical, and biological data for applicability to model development.

The 1976 atmospheric terrestrial ecological processes and effects program is designed to determine the transport and effects of pollutants produced from the various energy technology options. Energy technologies to be addressed in the 1976 program are limited to oil shale, coal combustion, coal development and extraction, and coal gasification and liquefaction. The major emphasis in the area of air transport research will be to determine the chemical/physical processes associated with the conversion of sulfur and nitrogen oxides to sulfates and nitrates and photochemical oxidant transport. The terrestrial area will focus on ecological impact from oxidants and toxic metals. Specific plans are to:

- Develop empirical methods for predicting stationary source plume dispersion in simple and complex terrain, emphasizing transformation and transport and removal of sulfates and nitrates;
- Develop methods relating atmospheric visibility reduction to the chemical/physical properties of fine particulates;
- Quantify the air pollutant mass balance effects of coal liquefaction and gasification processes and identify the important atmospheric processes;
- Develop site study program for deposition and scavenging measurements in vicinity of various types of sources including tall power plant stacks and smelters;
- Develop atmospheric forecasting capability in real time for single emission source; and
- Relate environmental parameters such as conditions of exposure, duration of pollutants, water vapor, temperature, wind, and sunlight to material loss.

The 1976 program in pollutant identification, measuring, and monitoring will apply advances in instrumentation sampling systems and methodology to high priority energy technologies such as solid waste and coal burning plants and oil shale operations. Additional field and remote monitoring instrumentation will be developed to parallel emerging technologies for use in 1976 and subsequent years. Both remote sensing and ground truth monitoring will be used because two approaches to monitoring the energy development program are needed: (1) an overview of regional and other large geographic areas and (2) specific site monitoring.

The 1976 program in policy and implementation research will continue and extend analyses and assessments initiated in 1975. Specifically, the plan calls for:

- Refinement and application of methods for comprehensive evaluation of environmental, economic and social consequences of energy alternatives to assist the Agency in policy formulation;
- Development of specific suggestions and documentation to support proposals for comprehensive energy production standards. Such standards will be based on considerations of multimedia, multipollutant and multiple pathway effects. They will include consideration of the economic and societal costs, and risks and benefits of alternatives. They will also consider the long-term requirements for environmental protection as determined by pollutant persistence and prospective health and other hazards;
- Analyses of environmental, social, and economic consequences of energy conservation alternatives with a view to identification of major changes in life styles, land uses, and transportation patterns that may be involved;
- Identification of useful and feasible institutional improvements for the effective and economical implementation of energy/environmental objectives;
- Identification and analysis of central policy issues for the longer term adaptation of energy systems to the requirements of environmental quality including radioactive waste management, strip mine reclamation, thermal, and other pollution control implementation problems; and
- Analyses of environmental consequences of changes in the mix of economic activity brought about by energy alternatives.

Purpose of Decrease

Although the 1976 processes and effects program envisions a level of effort comparable to the 1975 program, it has been determined that the effectiveness of the total program would be enhanced if certain research projects being conducted by the Energy Research and Development Administration (ERDA), supported by the interagency transfer of funds from EPA, were directly appropriated to that agency for 1976. The projects, totaling $6 million, were initated during 1975 and will continue the same programmatic activities in 1976 under control of ERDA. Coordination between the EPA and ERDA efforts will continue. The reduction of $6 million in the processes and effects program reflects the impact of this transfer of project jurisdiction.

The additional 22 positions requested will strengthen direction of the program and help provide improved control over the major portion of the program executed via contract and transfer to other agencies.

Energy

Research and Development

Control Technology

	1975	1976	Change
Control technology..	$81,000,000	$65,000,000	-$16,000,000

The environmental control technology program is designed to identify, develop, and demonstrate cost-effective control techniques for energy extraction, transmission, conversion, and use. The program necessarily involves assessment of the pollution potential of source effluent streams and the technological processes producing those pollutants, as well as research and development on control devices and process modifications to reduce the impacts of pollutants on the environment. The objective of the program is to provide adequate environmental protection as the nation moves toward expanding use of domestic fuels.

The environmental control technology research and development program is subdivided into four general subactivities: (1) extraction and beneficiation; (2) fossil fuel combustion; (3) synthetic fuels; and (4) advanced systems and conservation.

1975 Plan

Measures will be developed in the extraction and beneficiation program to reduce the environmental impacts of extracting coal, oil shale, oil, and natural gas, to remove potential pollutants from these fuels and to reuse or properly dispose of wastes resulting from extraction and processing activities. EPA proposes to significantly expand its environmental assessment with particular emphasis on western surface coal and oil shale mining. The program includes initiation of programs to revegetate mined lands in order to reduce the impacts on air and water quality, to dewater aquifers in order to eliminate mine acid discharges, to improve oil spill protection and cleanup measures, and to stabilize spent oil shale, and the construction of a chemical coal cleaning pilot plant and other process evaluation and development facilities for the study of problems associated with the removal of potential pollutants from fossil fuels. Portions of the program will involve support of and coordination with other agencies such as the U.S. Bureau of Mines, the U.S. Department of Agriculture, and the Appalachian Regional Commission.

Processes for controlling air emissions of sulfur oxides, nitrogen oxides, particulates and hazardous materials from fossil fuels combustion sources will be developed in the fossil fuel combustion program. Demonstration of current generation of stack gas scrubbers (flue gas desulfurization systems) will be completed. Demonstration programs for two second generation stack gas cleaning processes will be initiated. Pilot scale testing and evaluation of several promising flue gas desulfurization (FGD) technologies will be performed. Special attention will be placed on ensuring that the end products of FGD systems can either be disposed of in an environmentally sound manner or sold as a usable product. Environmental assessments will be performed to determine the impact of fine particulate and hazardous effluents from fossil fuel combustion sources and, where appropriate, technology will be developed to control these emissions. Development of technology for NO_x control will be accelerated.

Additionally, the environmental impact of fluidized bed combustion (FBC) processes, which offer promise of efficient coal use with minimal environmental problems, will be evaluated, and selected fluidized bed assessment programs will be performed as part of the National Fluidized Bed Combustion Program being evolved with EPA, the Office of Coal Research, Federal Energy Administration, Department of Housing and Urban Development, National Science Foundation, and Electric Power Research Institute as the active participants. The development work will include continued testing of EPA's FBC "Miniplant", and design of a 30 megawatt flexible test facility for use in environmental assessment of future FBC systems.

The synthetic fuels program is directed toward two major objectives: the assessment of the potential environmental impact of synthetic fuel processing plants and the development of control technology to minimize adverse environmental effects. The environmental assessment activity involves initiation of an effort to characterize feed stock materials with concurrent studies assessing the impact of shale oil recovery, coal liquefaction, and high and low BTU coal gasification processes. In the control technology development area, several programs will be continued and others initiated to enable air, solid waste, and water pollution control technology to progress concurrently with fuel processing technology under development by the Office of Coal Research and the Bureau of Mines. An important element in the control technology area will be the initiation of the design and construction efforts for a small in-house flexible gasifier test facility to be used for control technology evaluation.

Methods to control thermal effluents and to use solid wastes as fuels in an environmentally acceptable manner are the major elements of the advanced systems and energy conservation program. These elements will support the Agency's thermal and solid waste management regulatory responsibilities by providing hardware, systems, and parametric environmental data for regulatory and technical assistance purposes. EPA is also significantly expanding environmental assessment and environmental technology assessment programs with respect to waste-heat recovery, energy conserving industrial process changes, the uranium fuel cycle, and solar and geothermal sources. Extensive coordination between EPA, FEA, ERDA, NSF, and other agencies is planned.

1975 Accomplishments

Extraction and Beneficiation

- Publish a comprehensive manual of practice for environmental management of surface mining operations in both the eastern and western United States;
- Publish a manual of practice for the surface disposal of coal refuse;
- Complete the extension of a method for predicting the acid-forming potential of overburden to all areas of the eastern United States and publish a technical instructional manual on this method;
- Complete an analysis of the feasibility and environmental pay-off of "down-dip" mining of deep coal seams, resulting in planned flooding of underground mines upon abandonment and reduction or elimination of acid discharge;
- Complete an evaluation of the peformance of existing types of sediment control basins, including those commonly specified by State regulations;

- Complete the construction and shakedown of a facility for the full-scale evaluation of the performance of oil spill control devices;
- Demonstrate a highly efficient oil/water separator, based upon chemical flocculation methods for use on offshore oil production facilities;
- Complete an initial evaluation of the effectiveness of existing and projected methods for stabilizing spent oil shale (final evaluation in 1978);
- Initiation of the construction of the Meyers process coal cleaning pilot plant; and
- Completion of a physical coal cleaning design manual.

Fossil Fuel Combustion

- Initiate two demonstration programs for second generation FGD processes--one will be an advanced throw-away (sludge producing) system while the other will produce saleable elemental sulfur as a by-product;
- Complete the full-scale demonstration test programs for two current generation FGD processes;
- Perform an advanced test program on the lime/limestone prototype system to enhance process reliability, produce acceptable sludge products, and minimize costs;
- Accelerate and continue development of technology for control of NO_x and fine particulate effluents from combustion sources;
- Design a flexible fluidized bed test facility for environmental and performance evaluation; and
- Initiate an environmental assessment and systems evaluation of the use of low-sulfur western coal in industrial-size boilers.

Synthetic Fuels

- Initiate major environmental assessment studies for shale oil recovery, coal liquefaction. low-BTU and high-BTU coal gasification processes;

- Initiate construction of flexible test facility for pollutant control technology development and evaluation for coal gasifiers; and
- Continue development work aiming toward cleanup at high temperature of low-BTU gasifier effluents.

Advanced Systems and Conservation

- Ecological and health parameters of waste heat discharge will be assessed and linked to engineering criteria for discharge methods;
- Alternatives for the recovery of waste heat in an environmentally sound manner will be evaluated from technical, regulatory, and economic perspectives;
- Completion of optimization-of-mix studies concerning the use of animal and crop (agricultural) wastes as sources for noncombustion reclamation of energy values;
- Completion of more comprehensive process evaluations and environmental assessment testing programs for refuse processing and combustion (St. Louis, Missouri; Columbus, Ohio);
- An initial evaluation of the environmental aspects and control technology needs (emphasis on air impacts) of avaiable biological, chemical, and pyrolytic systems for converting solid wastes to fuels;
- Environmental and technical assessments of energy-conservative industrial process modifications covering nine major energy consuming industries, and the identification of best options for development activities in 1976;
- Completion of systematic environmental assessments of the uranium use cycle, with emphasis on mining and water pollution problems; and
- Completion of initial environmental assessments of methods for using geothermal energy, with emphasis on pollution of ground and surface water.

1976 Plan

The 1976 program in extraction and beneficiation will complete evaluations of problems and technology for dealing with western acid mine drainage, secondary and tertiary oil and gas recovery, coal storage facilities, fine sediment control from probable oil shale operations, and steep slope surface coal mining. Demonstrations of several of the leading technologies for controlling acid mine drainage will be completed and comprehensive guidelines will be published in several areas, including models for predicting potential pollution problems. The much needed data base on coal cleaning, completed in 1975, will be maintained and expanded with additional environmental data to keep pace with the broadening Federal energy R&D program and the growing national energy requirements. Efforts attacking problems of reuse and disposal of wastes from fossil fuel cleaning will be expanded in 1976 with the goal of developing significant near-term results early in the effort.

Efforts for controlling emissions of sulfur oxides, nitrogen oxides, particulates and hazardous materials from fossil fuel combustion sources will be continued in the 1976 fossil fuel combustion program. Full-scale demonstration of two FGD processes initiated in 1975 will be continued. An additional second generation FGD process, producing sulfur as the end-product, may be initiated. A comprehensive and intensive technology transfer program will be initiated to assure application of FGD expertise generated by EPA to the commercial sector. Control technology efforts will be accelerated in the fine particulate and hazardous effluents control technology areas. NO$_x$ technology control efforts will be continued. For the FBC program, efforts will be accelerated in the Miniplant evaluation program; the construction, operation, and evaluation of the test facility; and in the evaluation of the use of low sulfur western coal in industrial-size boilers.

The 1976 synthetic fuel program will allow for expansion of the environmental assessment of the impact of the various synthetic fuel processing plants for most of the important conversion processes presently under development. The flexible test facility for gasifier control technology evaluation would be completed, and the test program initiated. Development effort would continue in the control technology area, enabling pollution control technology to proceed concurrently with fuel processing technology being developed by ERDA.

In the 1976 advanced systems and conservation program, emphasis will shift toward development of thermal waste control and solid waste reuse technology methodology and environmental assessment activities in conjunction with the expanding Federal R&D program in energy conservation, nuclear energy, and other advanced energy systems. Specifically:

- Thermal control and reuse methods research will increase significantly as initial assessments of the ecological and health parameters of discharge and reuse are completed and these assessments are linked with engineering and economic evaluations;
- Research on the direct combustion of solid wastes as supplementary fuels will expand to include oil-fired boilers and other types of coal-fired boilers such as fluidized bed combustors. Research on non-combustive methods (fermentation, chemical, and pyrolytic) for converting solid wastes to usable energy will be expanded;
- Development of industrial process modifications to effect environmental controls and energy conservation will be initiated on the basis of detailed environmental assessments of major energy using industries, and additional assessments will be undertaken; and
- Detailed environmental assessments and development or control methods for energy-conservative industrial process changes will be performed as indicated by preliminary phase work completed in 1975.

Purpose of Decrease

In most areas, the 1976 program will maintain a level of effort comparable to that in 1975. The bulk ($11,000,000) of the decrease reflects the fact that the two second generation stack gas cleaning demonstration plants were fully funded with 1975 monies, with only modest operational expenses required to fully support those projects in 1976.

A second area of reduction ($2,000,000) reflects a phasing down of activities in eastern surface and underground mining, although efforts in western coal surface mining and oil shale mining will be maintained.

The third area of reduction ($3 million) is in the advanced systems and conservation program. In this area, 1975 monies were used to fund multiyear projects, with only reduced operational expenses required to fully support those projects in 1976.

The additional 18 positions requested will serve to strengthen management of the program and to provide increased control of the major portion of the effort executed via contract and transfer to other agencies.

Agency and Regional Management

	1975	1976	Increase or Decrease
Budget Authority			
Agency Management and Support....	$49,262,700	$56,034,900	+$6,772,200
Regional Management and Support......	11,206,800	11,323,600	+ 116,800
Total........	60,469,500	67,358,500	+ 6,889,000
End-of-Year Employment			
Agency Management and Support....	1,332	1,346	+14
Regional Management and Support......	491	491	...
Total........	1,823	1,837	+14

Overview and Strategy

This program area covers Agencywide policy direction and administration as it is carried out at both headquarters and the regional offices. It also covers certain common services and functions which can be most effectively managed on an Agencywide basis. A meaningful way to characterize these activities is in terms of those which involve management as opposed to those which are of a supportive nature.

Management activities are personnel related in that they include the salaries and expenses of the Administrator and his immediate staff and staff offices, the 10 Regional Administrators and their staffs, as well as the various organizational units which provide centralized services. These include program planning and evaluation, budgeting and financial management, personnel services, contracts and grants administration, audit, public information, legislative liaison, and other activities required for the effective management of all Agency programs. The full cost of these managerial activities is charged to the Agency and Regional Management appropriation.

Support activities do not involve personnel and include a variety of costs associated with items such as office services, rental of space, communications, housekeeping services, and ADP support. These Agencywide support activities are general in nature and are controlled centrally, and costs cannot readily be associated with a specific organization or program; however, it is important that these costs in some way be associated with the programs which benefit from them. To accomplish this, the total costs are allocated on a prorata basis to the various appropriations where they are included under the budget activity Program Management and Support. The Agency and Regional Management appropriation includes only the prorata share of these support costs which can be allocated to Agencywide management activities.

The scope of these Agencywide management activities is, of course, dictated by the direction and requirements of the programs which they serve as well as by the budgetary constraints under which these estimates have been developed. Consistent with this, the assumption has been made that the program increases reflected elsewhere in these estimates can be accomplished without a corresponding increase in Agencywide management personnel and, in fact, plans call for a decrease of 35 positions in the headquarters management by the end of 1976. However, it should be recognized that there are increased costs associated with on-going support activities which can be characterized as being largely mandatory in nature. It should also be understood that there are certain functions covered by this account (audit and environmental impact statement preparation) which are tied directly to other Agency strategies and as a result require significant resource increases.

Summary of Increases and Decreases

1975 Agency and Regional Management..........	$60,469,500
Agency Management and Support..............	6,772,200
To provide for increased costs associated with various supporting activities such as ADP services, rent and utilities, environmental impact statement preparation, additional audit coverage, and the full-year cost of the October 1974 pay raise.	
Regional Management and Support............	116,800
To provide for the full-year cost of the October 1974 pay raise.	
1976 Agency and Regional Management Request...	$67,358,500

Agency and Regional Management

Agency Management and Support

	1975	1976	Increase or Decrease
Budget Authority			
Agency Management...	$39,554,300	$44,264,000	+$4,709,700
Agency Support.	9,708,400	11,770,900	+ 2,062,500
Total......	49,262,700	56,034,900	+ 6,772,200
End-of-Year Employment			
Agency Management...	1,332	1,346	+14
Agency Support.	...	...	...
Total......	1,332	1,346	+14

Purpose

The Agency management and support activity covers the top level policy direction of Agency programs provided by the Administrator and his immediate staff and staff offices, the Agencywide management functions performed by the Office of Planning and Management, and the centralized administrative services provided to all operations located in Washington, D.C.; Research Triangle Park, North Carolina; and Cincinnati, Ohio. It also provides for certain support costs which are budgeted on an Agencywide basis.

Agency and Regional Management

Agency Management and Support

Agency Management

	1975	1976	Change
Agency management.....	$39,554,300	$44,264,000	+$4,709,700

The Agency management subactivity provides for staffing and related expenses of the immediate office of the Administrator and those staff offices which report directly to the Administrator, as well as for those of the Office of Planning and Management. Preparation of environmental impact statements (EIS's), covering projects or actions sponsored by EPA, is also included in this subactivity.

The Office of the Administrator is responsible for establishing Agency policies and for providing the overall direction needed to guide the Agency's activities. The staff offices carry out functions which are closely allied with this overall direction. This includes legislative services and congressional liaison, public information, management of the Agency's equal opportunity programs, direction and coordination of international activities, and the coordination of EPA programs with those of other Federal agencies. This latter function includes coordination of EPA's responsibilities under the National Environmental Policy Act and implementation of Executive Orders dealing with pollution control measures required of other Federal agencies. The resources associated with these offices are as follows:

	1975		1976	
	Pos.	Amount	Pos.	Amount
Office of the Administrator....	58	2,057,400	58	2,075,100
Office of Legislation......	40	924,800	40	936,900
Office of Public Affairs..........	68	2,937,200	68	2,958,100
Office of International Affairs	24	781,600	24	788,900
Office of Civil Rights...........	17	547,300	17	550,300

	1975		1976	
	Pos.	Amount	Pos.	Amount
Office of Federal Activities.....	30	762,400	30	771,500
EIS preparation*.	50	5,015,800	64	8,630,900
Total......	287	13,026,500	301	16,711,700

* Resources for EIS preparation will be allocated to both headquarters and the regional offices; they are shown here for purposes of comparability with the 1975 budget.

The Office of Planning and Management performs the Agencywide management functions involved in planning and implementing EPA programs and provides the administrative services required by headquarters and the two major field centers located at Research Triangle Park, North Carolina, and Cincinnati, Ohio. The major organizational components within the Office of Planning and Management include the Office of Administration, which provides services in the areas of general management and organization, grants and contracts administration, personnel, data systems management, facilities and support services, and security and inspections; the Office of Resources Management, which is concerned with program analysis, budgeting, and accounting functions; the Office of Planning and Evaluation, which provides a central independent focus for economic analysis, program evaluations, and the coordination of Agency standards, regulations, and guidelines; the Office of Audit, which is responsible for the Agency's comprehensive audit program; and the Office of Education and Manpower Planning, which develops coordinated plans and evaluates the effectiveness of EPA's various manpower training programs. The resources associated with these various offices are:

	1975		1976	
	Pos.	Amount	Pos.	Amount
Office of Assistant Administrator.......	5	149,800	5	151,400
Office of Administration........	738	15,562,200	714	15,788,700
Office of Resources Management.....	183	3,760,600	173	3,816,300

	1975		1976	
	Pos.	Amount	Pos.	Amount
Office of Planning and Evaluation.....	58	4,663,000	58	4,680,600
Office of Education and Manpower Planning.	5	200,500	4	202,100
Office of Audit..	56	2,191,700	91	2,913,200
Total.......	1,045	26,527,800	1,045	27,552,300

The major areas of increase proposed for 1976 are related to the preparation of environmental impact statements and to the Office of Audit.

With certain exceptions, the National Environmental Policy Act of 1969 requires that all Federal agencies prepare environmental impact statements on all of their proposed major actions which would significantly affect the environment. Accordingly, EPA has undertaken the preparation of EIS's (or negative declaration in instances where no significant environmental impact is involved) for municipal wastewater treatment plant grants and for the issuance of new source discharge permits. In addition, the Agency has announced a policy of voluntarily preparing EIS's for major regulatory actions even though they are not required by law. The estimates for 1976 are based upon the following workload projections:

Construction grants -133 EIS's, 2517 negative declarations
New source discharge -100 EIS's, 400 negative declarations
Regulatory actions -20 interim, 30 final EIS's

The preparation of EIS's is a direct responsibility of EPA. The Agency intends to rely on the environmental assessments submitted by applicants for much of the information needed in the drafting of EIS's and plans to rely heavily on consultants to assist the EPA staff in the evaluation of this information and preparation of the final EIS's. This approach will have the least impact on EPA direct employment. Estimates regarding the amount of staff and consultant time required in preparing EIS's and negative declarations have been conservative, and further experience may demonstrate the need for additional resources in this area.

In the discussion of the Agency's strategy for delegating major responsibilities for construction grants administration to the States (which appears elsewhere in this document), it is noted that the audit function is one which must be retained in order to exercise an effective Federal overview. With 1975 staffing levels, the Office of Audit is able to perform audits only at the completion of each construction grant project and, in these final audits, can only review the records of the municipalities which receive the grants. Because of their timing, final audits do not serve as an adequate deterrent to irregularities which might potentially occur before and during construction, and are not sufficiently detailed to detect any irregularities which may have actually occurred in the design and construction phase of the projects. The potential for fraud and mismanagement is obvious in a public works program of this magnitude and a major irregularity could result in an embarrassment to the Agency and to the Administration. The increase of 35 positions and $721,500 indicated above will permit audit coverage to be expanded on completed projects and interim audits to be performed on a representative sample of on-going projects. It is felt that interim audits are particularly effective, both in preventing irregularities and assisting grantees, in the effective management of Federal funds.

The increase in audit personnel is partially offset by a decrease of 35 positions elsewhere in the Office of Planning and Management, to be accomplished by the end of 1976. Twenty-four of these positions will be in the Office of Administration and can be associated with the continued implementation of a recently completed management study of administrative service activities in Washington, D. C.; Research Triangle Park, North Carolina; and Cincinnati. The remaining 11 positions will be distributed among other Office of Planning and Management units located within headquarters.

Agency and Regional Management

Agency Management and Support

Agency Support

	1975	1976	Change
Agency support...	$9,708,400	$11,770,900	+$2,062,500

The Agency support subactivity covers the costs necessary to support all program operations carried on at headquarters; Research Triangle Park, North Carolina; and Cincinnati, Ohio. These include a variety of office and building services including printing and duplicating, office supplies and equipment, audio visual services, motor pool operations, local telephone services, utilities, guard and janitorial services, library services, building maintenance contracts, and associated activities. Also covered are a variety of Agencywide costs which are budgeted for and managed on a centralized basis. These include rental of facilities, postal charges, security clearances, Federal Telecommunications charges, centralized ADP services, costs of the initial equipment for regional laboratories, as well as contractual services for economic and analytical studies which are supportive of a variety of Agency programs.

Since Agency support costs are prorated to the various EPA appropriations according to their personnel levels, the amount shown above is reflective only of that portion of the total which is allocated to the Agency and Regional Management appropriation. However, in order to provide a more complete explanation of the total scope of the Agency's supporting activities the following discussion deals with the overall cost of providing support services.

The total cost of providing support services to the Agency is as follows:

	1975	1976	Change
Building services.	8,892,000	11,139,000	+ 2,247,000
Office services...	1,752,000	2,070,000	+ 318,000
ADP...............	13,333,000	15,833,000	+ 2,500,000
Agencywide costs..	24,165,400	29,413,000	+ 5,247,600
Total.......	48,142,400	58,455,000	+10,312,600

The increase in building services is due primarily to the cost of relocating offices and laboratories into replacement facilities in Washington, D.C.; Research Triangle Park, North Carolina; and Cincinnati, Ohio. These moves are to occur in late 1975 or early 1976. However, it should be noted that many of these costs are of a nonrecurring nature and that some of the remaining cost increases resulting from these moves will be offset by economies and efficiencies accruing in the program areas which occupy the new facilities. Among the anticipated increases attributable to the occupancy of new space are the cost of additional telephone installations; labor services for moving offices, laboratory furniture, and equipment to the new locations; additional guard, janitorial, and employee health services; and contracts for equipment maintenance made necessary by the more complex nature of the new facilities. Provisions are also being made for actual or anticipated increases in the rates charged for local telephone service, utilities, guard and janitorial services, and other related service activities.

The increase in the cost of providing office services can be related almost exclusively to cost increases in office supplies and equipment (including those provided through the GSA supply system) and in the audio visual, printing, and duplicating services.

The Agency is now completing an extensive study of its ADP operations which has been made at the request of the Congress. Pending the review, acceptance, and subsequent implementation of the study's recommendations, the 1976 budget estimates are based upon the amounts required to provide an adequate level of support to Agency programs using existing ADP systems. These estimates also take into account anticipated cost increases related to the scheduled renegotiation of contracts for ADP time-sharing services and for making some improvements in existing systems which can clearly be shown as cost-effective.

The overall increase in Agencywide costs is related to several factors. The most significant is a net increase in rental charges which takes into account additional space or increased charges for facilities in the regional offices and laboratories, the National Environmental Research Centers, and the headquarters. These are partially offset by the savings which result from the move in Cincinnati, Ohio, from leased to government owned space. Others include the full-year cost of increased charges made by the General Services

Administration for the Federal Telecommunications Service, the Postal Service for mail service, as well as the cost of providing equipment for replacement laboratories in Annapolis, Maryland, and Washington, D.C. These laboratories are among those specified in the EPA National Laboratory Plan as urgently needing replacement because the existing laboratories are either wholly inadequate or unsafe.

Agency and Regional Management

Regional Management and Support

	1975	1976	Increase or Decrease
Budget Authority			
Regional Management...	$10,461,800	$10,612,100	+$ 150,300
Regional Support......	745,000	711,500	- 33,500
Total......	11,206,800	11,323,600	+ 116,800
End-of-Year Employment			
Regional Management...	491	491	...
Regional Support......	...	...	...
Total......	491	491	...

Purpose

The regional management and support activity provides for both the top level direction of program operations and the general management functions which must be carried out in each of the Agency's 10 regional offices. It also includes those support activities required by the regional offices which are not covered by the Agencywide common services costs described previously under the agency support discussion.

Agency and Regional Management

Regional Management and Support

Regional Management

	1975	1976	Change
Regional management.....	$10,461,800	$10,612,100	+$ 150,300

The regional management subactivity provides for the salaries and related expenses of the Regional Administrators and their immediate staffs as well as for those staff offices --intergovernmental relations, public affairs, and civil rights--which report directly to the Regional Administrators. It also covers the region's Management Divisions, which perform the centralized administrative functions--program planning and budgeting, personnel, financial management, procurement, and other service activities required to support regional operations. The resources required for these activities in each of the regional offices are as follows:

Region	1975		1976	
	Pos.	Amount	Pos.	Amount
I (Boston).......	47	943,100	47	957,300
II (New York)....	51	1,048,000	51	1,063,500
III (Philadelphia)	52	1,167,700	52	1,185,100
IV (Atlanta).....	57	1,262,700	57	1,279,700
V (Chicago)......	71	1,425,300	71	1,446,800
VI (Dallas)......	47	1,071,600	47	1,085,800
VII (Kansas City)	36	776,300	36	787,300
VIII (Denver)....	42	975,100	42	987,900
IX (San Francisco)	50	959,400	50	974,600
X (Seattle)......	38	832,600	38	894,100
Total......	491	10,461,800	491	10,612,100

No program increase is provided for 1976 in the area of regional management except for a minimal increase to provide for the full-year cost of the October 1974 pay raise. As is the case in Agency management, it has been assumed that the administrative workload associated with projected program increases can be accommodated by effecting economies in management operations.

Agency and Regional Management

Regional Management and Support

Regional Support

	1975	1976	Change
Regional support.	$745,000	$711,500	-$33,500

This subactivity covers the common services which are provided in all of the regional offices. These include local telephone service, office supplies and equipment, guard and housekeeping services and similar services required to operate regional offices. As in the case of Agency support, the total cost of support services are prorated to the various EPA appropriations on the basis of personnel strength and the amount shown above is only that portion of the total which is related to regional management activities.

Agency and Regional Management

Summary of Resources
(dollars in thousands)

	1975	1976	Increase or Decrease
Budget Authority			
Agency and Regional Management			
Agency Management....	$39,554.3	$44,264.0	+$4,709.7
Agency Support..	9,708.4	11,770.9	+2,062.5
Regional Management....	10,461.8	10,612.1	+150.3
Regional Support	745.0	711.5	-33.5
Total.......	60,469.5	67,358.5	+6,889.0
End-of-Year Employment			
Agency and Regional Management			
Agency Management...	1,332	1,346	+14
Agency Support.	...	...	...
Regional Management...	491	491	...
Regional Support	...	...	...
Total....	1,823	1,837	+14

Buildings and Facilities

	1975	1976	Increase or Decrease
Budget Authority			
Buildings and Facilities....	$1,400,000	$2,100,000	+$ 700,000

Purpose

This appropriation covers the design and construction of new EPA owned facilities as well as necessary repairs and improvements to federally-owned installations which are occupied by EPA. Modifications and repairs to leased facilities, to the extent that they are paid for directly by EPA, are covered under the agency support activity under the Agency and Regional Management appropriation.

1976 Program

Plans for 1976 do not contemplate the construction of new facilities or major expansion of existing facilities and are limited to necessary repairs and improvements. Requirements are based upon a recently completed survey of the physical condition of EPA facilities and are limited essentially to projects identified in this review as being necessary to protect the health and safety of EPA employees so as to meet standards set by the Labor Department under the Occupational Health and Safety Act. Other projects, including those needed to protect the government's investment in these facilities or to improve their utility for program operations, are to be deferred and will be undertaken in 1976 only if an urgent need develops.

The work to be carried out in 1976 involves 18 specific projects at 11 locations. Included are items such as the installation of fire suppression systems; providing safe storage for hazardous materials; replacement of defective wiring; upgrading of laboratory heating and ventilation systems; changing the direction of door swings; replacing stairs and installing safety railings; and installing fire hydrants.

Scientific Activities Overseas
(Special Foreign Currency Program)

	1975	1976	Increase or Decrease
Budget Authority			
Scientific Activities Overseas	...	$6,000,000	+$6,000,000

Purpose

Scientific Activities Overseas, developed and implemented under the Special Foreign Currency Program, are funded from excess foreign currencies accruing to the United States under various U.S. programs. The use of excess currencies creates a unique opportunity to conduct scientific and technological programs abroad. Their use does not create a balance of payments deficit or contribute to domestic inflation. Under the Special Foreign Currency Program (SFCP), high quality studies that are relevant to EPA's domestic programs are carried out in the participating excess currency countries by outstanding foreign scientists and engineers in conjunction with their counterparts in EPA. Each study submitted for funding under the SFCP is reviewed within EPA and by consultants to insure that the desired results are being achieved. In addition to the achievement of scientific goals, this program serves as an important bridge in maintaining ties with the participating countries. EPA's scientific and technological programs are recognized in the participating countries as visible evidence of U.S. efforts to engage in peaceful endeavors directed toward the development of knowledge and technological advancement specific to our global environment.

Budget Authority

	1976
Poland	$3,500,000
Egypt	1,000,000
Pakistan	500,000
Tunisia	250,000
India	750,000
Total	6,000,000

Program Statement

The Special Foreign Currency Program (SFCP) enables EPA to utilize unique research and demonstration opportunities in environmental research centers, industries and ecological settings abroad to supplement and/or complement its domestic programs. Environmental studies supported with U.S.-owned excess currencies in Poland and Egypt are providing data that is being used to formulate water pollution, air pollution and other environmental standards and regulations for application in the United States. Further, research proposed by scientists in those countries and in India, Pakistan and Tunisia will enhance EPA's domestic enforcement and regulatory programs. SFCP cooperative activities conducted in the participating countries are based on scientific evaluations of each activity to determine its merit and relevance to EPA's domestic goals. Such evaluation by EPA's scientists and experts is done to insure maximum benefit to EPA from its foreign investment in manpower and funds.

In 1974, $5,400,000 was available for new proposals. Of this amount, EPA obligated approximately $4,000,000. In 1975, the Congress provided no additional funds, leaving only $1,400,000 in carryover funds for support of 1975 projects.

1975 Programs and 1976 Plans

Poland

Polish science and technology is highly respected by EPA scientists and both countries have similar and complementary interests in the environment.

The US-Polish Agreement on Joint Funding of Scientific and Technological Cooperation was signed on October 8, 1974, on the understanding that the equivalent of $10 million in zlotys would be placed into the Joint Fund by U.S. agencies to be used for energy and energy-related research. The Polish government will match this $10 million contribution. Without this additional U.S. contribution of $10 million in zlotys, the Polish government would not have concluded the Agreement.

The United States Treasury agreed to the U.S. agencies placing the equivalent of $10 million into the Joint Fund for energy and energy-related research, subject to availability of funds and provided the additional $10 million for the new energy research is included in the 1976 budget request. In view of the many opportunities for excellent energy-related environmental research in Poland, $2 million of the $10 million available under this agreement was allotted to the Environmental Protection Agency.

Energy-related projects will focus on research in the following areas:

(1) Identification and quantification of pollutants from a commercial gasification plant;

(2) Investigation of the vortex sieve for dewatering and classification of fine-size coal;

(3) Study of the effects from radioactive effluents from nuclear fuel reprocessing and refabrication operations;

(4) Epidemiological study of the effects of major effluents from high temperature combustion of coal and from coal gasification processes; and

(5) Characterization of effluents and determination of toxicological effects in animals arising from exposure to major effluents from high temperature coal combustion and from coal gasification processes.

Egypt

Cooperative activities between Egyptian and American scientists and technical agencies are most cordial and fruitful and recent diplomatic achievements have strengthened the scientific and political milieu. EPA scientists and experts have developed with their counterparts several beneficial projects utilizing unique Egyptian expertise and settings including:

(1) Development of predictive models simulating major ecosystems on the Western Mediterranean coastal land of Egypt. The results of the Egyptian studies are translatable in terms which are of value to scientists in the southwestern U.S.

(2) An interdisciplinary study of the effects of water impoundment on large river systems (Nile). Results of the Nile River study will be valuable in assessing the environmental impact of dam construction and impoundments in the United States.

(3) A study of the toxicological effects of newly developed

pesticides on plants and animals. It will provide an early warning to EPA concerning the safe use of certain pesticides and enable the U.S. to avoid harmful episodes similar to those that have occurred in Egypt.

(4) An investigation of the effects of newly developed toxicants on man. The study will involve medical, biochemical, chemical, toxicological, epidemiological and pharmacological investigations on exposed individuals and experimental animals. Information that will be obtained from this investigation will be vital to EPA and Egypt by providing evidence to EPA to approve or disapprove the registration of newly developed pesticides proposed for use in the U.S.

The purpose of this project is to monitor the levels of various toxicants in water, soil and agricultural commodities before and after aerial and ground application of pesticides used to control agricultural pests. Establishing the levels of newly developed pesticides in the environment will provide urgently needed information about the persistence of these chemicals which in turn will provide data to EPA and the Egyptian officials to reduce the health hazards to man and animals. This information will also assist EPA in making decisions for registering newly developed pesticides for use in the U.S.

Projects proposed for 1976 include:

(1) Studies of biological alternatives to chemicals in control of agricultural pests;

(2) Investigations of health and ecological effects and movements of pesticides in the environment;

(3) Determination of health effects of bathing and related recreational waters;

(4) Studies of health aspects of sewage irrigation systems;

(5) Studies of the effect of water purification processes on virus removal;

(6) Study of low cost waste water treatment methods including research on improved oxidation ponds;

(7) Studies of water recycling and processing in poultry and canning industries; and

(8) Studies of coastal zone management and water quality protection of a major urban center.

India

Environmental agencies in India have been urged by their government to submit proposals for funding under the SFCP. The Government of India has expressed high-level interest in environmental pollution problems and has submitted a listing of program areas that will be pursued to satisfy Indian priorities and to meet EPA's domestic priorities. Cooperative programs will be developed in such broad environmental areas as integrated pest control; hydrology and water resources; water supply and waste treatment; and conventional and nonconventional sources of energy. EPA will continue to develop multi-disciplinary programs and institutional arrangements that will match the resources of U.S. and Indian environmental research institutions.

Tunisia

Principal activity in Tunisia in 1974 and 1975 has been in support of EPA's cooperative study of eutrophication problems in the Lake of Tunis. This study is intended to define the eutrophication problems, to evaluate the potential benefits of diverting sewage effluence from Tunis and to discover the rate and extent of recovery of the Lake after diversion. Data from the study will permit the development of a predictive model that could be adopted for use in U.S. lakes undergoing eutrophication problems. In 1976, EPA will support research on the effective utilization of stabilization ponds as a means of waste water disposal. The Tunisian government plans to spend several million dollars in the design and construction of stabilization ponds based on recent design studies at the University of California (Berkeley). EPA will support a three year study to measure the effectiveness of these ponds and to determine the validity of the various design criteria in actual practice. EPA will also study the effects of human sewage pollution on sand beaches in Tunisia. The disposal of sewage on beaches presents a potential health hazard in highly developed regions and very little is known about the processes through which these pollutants are dispersed into the environment.

Pakistan

In 1976, EPA will initiate research and applied science programs in Pakistan. Program areas of direct interest to EPA which are also responsive to the massive health related environmental problems of Pakistan have been identified. Control of water pollution is clearly the area of highest priority. Drinking water is a critical factor in human development and health studies will be made to determine the effects of polluted water on the central nervous system. EPA efforts will also place emphasis on problems of water reuse. Other applied programs concerning waste water disposal and protection of ground water supplies will be supported. EPA plans to encourage a study of marine biology in the Arabian Sea, including the role of the polluted Indus River Estuary in the productivity of the Arabian Sea. Studies that have been proposed include:

(1) "Role of Drinking Water in the Developmental Anamolies of the Central Nervous System";

(2) "Disposal of sewage on land for irrigation purposes. Effects of sewage on vegetables and other crops and its effect on the health of human beings and animals";

(3) "Treatment of sewage in rural areas and the disposal of sewage effluent by irrigation";

(4) "The effect of tannery waste disposal on land";

(5) "Health effects of deliberate reuse of water supply, utilizing the Karachi water system";

(6) "The conversion of feed lot and other animal wastes to gaseous fuels (energy) and fertilizer"; and

(7) "Marine biology in the Arabian Sea, and the role of the Indus River Estuary in supporting marine life in the Arabian Sea".

Purpose of Increase

The requested $6 million will permit restoration of the SAO program to its former operating level, as well as allow participation in the special cooperative program with the Polish government.

Special Analyses

Contents

Page

EPA Organization Chart........ SA-1

EPA Regional Offices--Locations........ SA-2

Summary of Resources........ SA-3

End-of-Year Employment and Budget Authority, by Media and Appropriation, 1975........ SA-8

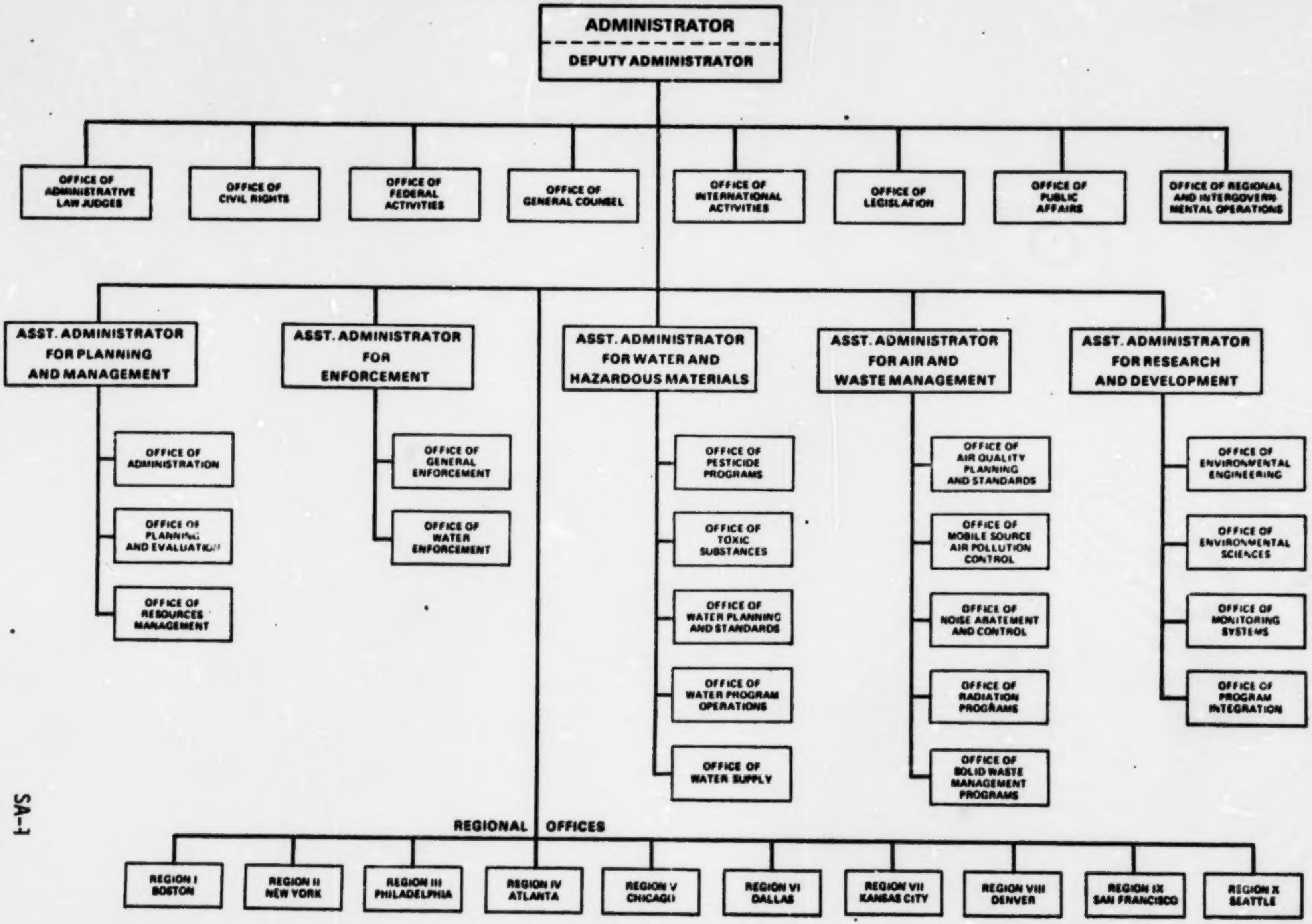
End-of-Year Employment and Budget Authority, By Media and Appropriation, 1976........ SA-9

New Obligational Authority by Media for Transition Period (July 1 - September 30, 1976)........ SA-10

Total Funds Available, 1975........ SA-11

Total Funds Available, 1976........ SA-14

U.S. ENVIRONMENTAL PROTECTION AGENCY


ADMINISTRATOR
DEPUTY ADMINISTRATOR
OFFICE OF ADMINISTRATIVE LAW JUDGES
OFFICE OF CIVIL RIGHTS
OFFICE OF FEDERAL ACTIVITIES
OFFICE OF GENERAL COUNSEL
OFFICE OF INTERNATIONAL ACTIVITIES
OFFICE OF LEGISLATION
OFFICE OF PUBLIC AFFAIRS
OFFICE OF REGIONAL AND INTERGOVERNMENTAL OPERATIONS
ASST. ADMINISTRATOR FOR PLANNING AND MANAGEMENT
OFFICE OF ADMINISTRATION
OFFICE OF PLANNING AND EVALUATION
OFFICE OF RESOURCES MANAGEMENT
ASST. ADMINISTRATOR FOR ENFORCEMENT
OFFICE OF GENERAL ENFORCEMENT
OFFICE OF WATER ENFORCEMENT
ASST. ADMINISTRATOR FOR WATER AND HAZARDOUS MATERIALS
OFFICE OF PESTICIDE PROGRAMS
OFFICE OF TOXIC SUBSTANCES
OFFICE OF WATER PLANNING AND STANDARDS
OFFICE OF WATER PROGRAM OPERATIONS
OFFICE OF WATER SUPPLY
ASST. ADMINISTRATOR FOR AIR AND WASTE MANAGEMENT
OFFICE OF AIR QUALITY PLANNING AND STANDARDS
OFFICE OF MOBILE SOURCE AIR POLLUTION CONTROL
OFFICE OF NOISE ABATEMENT AND CONTROL
OFFICE OF RADIATION PROGRAMS
OFFICE OF SOLID WASTE MANAGEMENT PROGRAMS
ASST. ADMINISTRATOR FOR RESEARCH AND DEVELOPMENT
OFFICE OF ENVIRONMENTAL ENGINEERING
OFFICE OF ENVIRONMENTAL SCIENCES
OFFICE OF MONITORING SYSTEMS
OFFICE OF PROGRAM INTEGRATION
REGIONAL OFFICES
REGION I BOSTON
REGION II NEW YORK
REGION III PHILADELPHIA
REGION IV ATLANTA
REGION V CHICAGO
REGION VI DALLAS
REGION VII KANSAS CITY
REGION VIII DENVER
REGION IX SAN FRANCISCO
REGION X SEATTLE

EPA Regions
Locations and States

Region I	Headquarters, Boston, Massachusetts Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Region II	Headquarters, New York, New York New Jersey, New York, Puerto Rico, Virgin Islands
Region III	Headquarters, Philadelphia, Pa. Delaware, Maryland, Pennsylvania, Virginia, West Virginia, District of Columbia
Region IV	Headquarters, Atlanta, Georgia Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
Region V	Headquarters, Chicago, Illinois Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
Region VI	Headquarters, Dallas, Texas Arkansas, New Mexico, Texas Oklahoma, Louisiana
Region VII	Headquarters, Kansas City, Missouri Iowa, Kansas, Missouri, Nebraska
Region VIII	Headquarters, Denver, Colorado Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
Region IX	Headquarters, San Francisco, California Arizona, California, Hawaii, Nevada, American Samoa, Guam, Trust Territories of Pacific Islands, Wake Island
Region X	Headquarters, Seattle, Washington Alaska, Idaho, Oregon, Washington

Summary of Resources

	1974	1975	1976	Increase or Decrease
Research and Development				
Budget authority...........	$159,427,742	$169,229,500	$162,631,600	-$6,597,900
Obligations................	160,396,086	166,087,500	164,631,600	-1,455,900
Outlays....................	116,496,174	161,000,000	167,000,000	+6,000,000
End-of-year employment.....	1,786	1,834	1,779	-55
Abatement and Control				
Budget authority..........	256,014,845	279,225,700	339,547,900	+60,322,200
Contract authority......	100,000,000 a/	150,000,000 b/	...	-150,000,000
Obligations...............	242,582,343	276,225,700	346,547,900	+70,322,200
Contract authority......	13,204,570	120,000,000	...	-120,000,000
Outlays...................	189,371,385	250,500,000	287,000,000	+36,500,000
Contract authority......	4,000,000	26,000,000	65,000,000	+39,000,000
End-of-year employment....	3,770	3,798	3,998	+200
Enforcement				
Budget authority.........	45,812,522	51,670,300	53,162,000	+1,491,700
Obligations..............	46,436,885	52,257,472	53,162,000	+904,528
Outlays..................	38,200,909	50,050,000	54,000,000	+3,950,000
End-of-year employment...	1,578	1,597	1,525	-72

	1974	1975	1975	Increase or Decrease
Agency and Regional Management				
Budget authority.............	55,693,902	60,469,500	67,358,500	+6,889,000
Obligations..................	49,731,148	60,469,500	67,358,500	+6,889,000
Outlays......................	48,153,164	57,150,000	63,000,000	+5,850,000
End-of-year employment.......	1,824	1,823	1,837	+14
Energy Research and Development				
Budget authority.............	...	134,000,000	112,000,000	-22,000,000
Obligations..................	...	110,000,000	125,000,000	+15,000,000
Outlays......................	...	32,000,000	113,000,000	+81,000,000
End-of-year employment.......	...	...	40	+40
Buildings and Facilities				
Budget authority.............	...	1,400,000	2,100,000	+700,000
Obligations..................	...	1,400,000	2,100,000	+700,000
Outlays......................	...	300,000	1,500,000	+1,200,000
End-of-year employment.......	...	...	...	...
Construction Grants				
Budget authority.............	...	...	...	...
Contract authority.........	4,000,000,000	9,000,000,000 c/	...	-9,000,000,000
Obligations..................	1,297,658,814	701,555,358	...	-701,555,358
Contract authority.........	1,493,022,582	3,500,000,000	5,600,000,000	+2,100,000,000
Outlays......................	1,394,604,501	1,600,000,000	700,000,000	-900,000,000
Contract authority.........	158,816,668	700,000,000	1,650,000,000	+950,000,000
End-of-year employment.......	...	...	...	...

	1974	1975	1976	Increase or Decrease
Scientific Activities Overseas				
Budget authority	2,000,000	...	6,000,000	+6,000,000
Obligations	3,990,573	1,440,635	6,000,000	+4,559,365
Outlays	3,109,746	3,600,000	4,000,000	+400,000
End-of-year employment	...	...	...	...
Operations, Research and Facilities				
Budget authority	...	...	...	...
Obligations	9,056,989	18,366,217	...	-18,366,217
Outlays	77,237,138	56,000,000	25,000,000	-31,000,000
End-of-year employment	83	...	...	...
Revolving Fund				
Budget authority	...	...	...	...
Obligations	624,773	508,712	500,000	-8,712
Outlays	187,295	60,000	50,000	-10,000
End-of-year employment	...	...	...	...
Trust Funds				
Budget authority	-4,871	...	...	...
Obligations	3,697	56,623	...	-56,623
Outlays	2,272	36,000	24,000	-12,000
End-of-year employment	...	...	...	...

	1974	1975	1976	Increase or Decrease
Reimbursements d/				
Budget authority.............	...	...	...	...
Obligations..................	3,591,725	6,000,000	6,000,000	...
Outlays......................	...	...	...	...
End-of-year employment.......	146	135	105	-30
Advances and Allocations Accounts				
Budget Authority.............	...	...	...	...
Obligations..................	...	...	...	...
Outlays......................	...	...	...	...
End-of-year employment.......	16	16	16	...
Consolidated Working Fund				
Budget authority.............	...	...	...	...
Obligations..................	573,827	255,026	...	-255,026
Outlays......................	188,356	304,000	439,000	+135,000
End-of-year employment.......	...	...	...	...
Total, Environmental Protection Agency				
Budget authority.............	518,944,140	695,995,000	742,800,000	+46,805,000
Contract authority........	4,100,000,000	9,150,000,000	...	-9,150,000,000
Obligations..................	1,814,646,860	1,394,622,743	771,300,000	-623,322,743
Contract authority........	1,506,227,152	3,620,000,000	5,600,000,000	+1,980,000,000
Outlays......................	1,867,550,940	2,211,000,000	1,415,013,000	-795,987,000
Contract authority........	162,816,668	726,000,000	1,715,000,000	+989,000,000
End-of-year employment......	9,203	9,203	9,300	+97

a/ Section 208 Areawide Waste Treatment Management. $100 million contract authority authorized for 1974 of which $86,795,000 was administratively cancelled.

b/ Section 208 Areawide Waste Treatment Management. $150 million contract authority authorized for 1975 of which $120 million is expected to be obligated.

c/ Includes $1,333,770,000 allotted earlier by Court Order but not made available for obligation until the Supreme Court decision of February 18, 1975.

d/ Included in the President's Budget under Research and Development, Abatement and Control, and Agency and Regional Management.

End-of-Year Employment and Budget Authority
By Media and Appropriation
1975
(dollars in thousands)

	Research and Development		Abatement and Control		Enforcement		Agency & Regional Management		Total	
	EOY	Amount	EOY	Amount	EOY	Amount	EOY	Amount	EOY	Amount
Air	456	$55,958.8	730	$87,317.3	404	$10,749.9	...	...	1,590	$154,026.0
Water Quality	568	46,373.2	1,664	261,190.8	890	24,064.8	...	...	3,142	331,628.8
(Appropriation)	(588)	(46,373.2)	(1,664)	(111,190.8)	(890)	(24,064.8)	...	...	(3,142)	(181,628.8)
(Contract Authority)	...	...	...	(150,000.0)	...	...	...	...	...	(150,000.0)
Water Supply	64	4,762.0	94	3,036.8	...	...	...	...	158	7,798.8
Solid Wastes	23	9,196.5	151	10,332.0	...	...	...	...	174	19,528.5
Pesticides	148	11,193.0	671	19,521.9	153	3,408.5	...	...	972	34,123.4
Radiation	72	2,637.7	191	4,569.9	...	...	...	...	263	7,207.6
Noise	3	544.9	55	4,889.0	1	21.3	...	...	59	5,455.2
Interdisciplinary	252	18,767.5	...	...	...	...	...	...	252	18,767.5
Toxic Substances	11	1,208.6	45	6,838.2	...	...	...	...	56	8,046.8
Program Management and Support	217	18,587.3	197	31,529.8	149	13,425.8	...	...	563	63,542.9
Agency and Regional Management	...	...	...	...	...	...	1,823	60,469.5	1,823	60,469.5
Subtotal	1,834	169,229.5	3,798	429,225.7	1,597	51,670.3	1,823	60,469.5	9,052	710,595.0
Energy Research and Development	...	...	...	...	...	...	...	...	...	134,000.0
Buildings and Facilities	...	...	...	...	...	...	...	...	...	1,400.0
Scientific Activities Overseas	...	...	...	...	...	...	...	...	...	...
Reimbursements	...	...	...	...	...	...	...	...	135	6,000.0
Revolving Fund	...	...	...	...	...	...	...	...	...	558.7
Advances and Allocations	...	...	...	...	...	...	...	...	13	...
Trust Funds	...	...	...	...	...	...	...	...	...	18.4
Total	1,834	169,229.5	3,798	429,225.7	1,597	51,670.3	1,823	60,469.5	9,200	852,572.1
(Appropriation)	(1,834)	(169,229.5)	(3,798)	(279,225.7)	(1,597)	(51,670.3)	(1,823)	(60,469.5)	(9,200)	(702,572.1)
(Contract Authority)	...	...	...	(150,000.0)	...	...	...	...	...	(150,000.0)

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End-of-Year Employment and Budget Authority
By Media and Appropriation
1976
(dollars in thousands)

	Research and Development		Abatement and Control		Enforcement		Agency and Regional Management		Total	
	EOY	Amount	EOY	Amount	EOY	Amount	EOY	Amount	EOY	Amount
Air	454	$47,973.6	773	$77,235.1	444	$12,080.0	...	...	1,671	$137,228.7
Water Quality	581	44,892.4	1,729	144,521.9	744	21,293.5	...	...	3,054	210,707.8
(Appropriation)	(581)	(44,892.4)	(1,729)	(144,521.9)	(744)	(21,293.5)	...	...	(3,054)	(210,707.8)
(Contract Authority)	...	...	...	...	...	...	...	...	...	...
Water Supply	75	12,364.2	175	19,860.9	5	100.0	...	...	255	32,325.1
Solid Wastes	23	3,997.3	161	11,622.7	...	...	...	...	184	15,620.0
Pesticides	148	11,197.9	671	29,552.1	153	3,582.9	...	...	972	44,332.9
Radiation	57	1,640.0	174	4,337.1	...	...	...	...	231	5,977.1
Noise	1	45.0	75	9,592.2	10	521.7	...	...	86	10,158.9
Interdisciplinary	252	20,775.8	...	...	...	...	...	...	252	20,775.8
Toxic Substances	11	1,209.0	45	6,850.3	...	...	...	...	56	8,059.3
Program Management and Support	177	18,536.4	195	35,975.6	169	15,643.9	...	...	541	70,155.9
Agency and Regional Management	...	...	...	...	...	...	1,837	$67,358.5	1,837	67,358.5
Subtotal	1,779	162,631.6	3,998	339,547.9	1,525	53,162.0	1,837	67,358.5	9,139	622,700.0
Energy Research and Development	...	...	...	...	...	...	...	...	40	112,000.0
Buildings & Facilities	...	...	...	...	...	...	...	...	...	2,100.0
Scientific Activities Overseas	...	...	...	...	...	...	...	...	...	6,000.0
Reimbursements	...	...	...	...	...	...	...	...	105	6,000.0
Revolving Fund	...	...	...	...	...	...	...	...	...	500.0
Advances and Allocations	...	...	...	...	...	...	...	...	13	...
Total	1,779	162,631.6	3,998	339,547.9	1,525	53,162.0	1,837	67,358.5	9,297	749,300.0
(Appropriation)	(1,779)	(162,631.6)	(3,998)	(339,547.9)	(1,525)	(53,162.0)	(1,837)	(67,358.5)	(9,297)	(749,300.0)
(Contract Authority)	...	...	...	...	...	...	...	...	...	...

New Obligational Authority by Appropriation by Media for Transition Period
July 1, - September 30, 1976
(dollars in thousands)

	Research and Development		Abatement and Control		Enforcement		Agency and Regional Management		Other		Total	
	Pos.	Amount	Pos.	Amount	Pos.	Amount	Pos.	Amount	Pos.	Amount	Pos.	Amount
Air	454	$12,625	773	$20,890	444	$3,120	...	...	...	...	1,671	$36,635
Water Quality	581	11,810	1,729	24,750	744	5,530	...	...	...	...	3,054	42,090
Water Supply	75	3,250	175	5,370	5	25	...	...	...	...	255	8,645
Solid Waste	23	1,050	161	3,140	...	...	...	...	...	...	184	4,190
Pesticides	148	2,950	671	8,000	153	930	...	...	...	...	972	11,880
Radiation	57	430	174	1,170	...	...	...	...	...	...	231	1,600
Interdisciplinary	252	5,465	...	...	...	...	...	...	...	...	252	5,465
Toxic Substances	11	318	45	1,850	...	...	...	...	...	...	56	2,168
Noise	1	12	75	2,600	10	135	...	...	...	...	86	2,747
Energy Research and Development	...	...	...	...	...	...	...	...	40	$21,000	40	21,000
Program Management and Support	177	4,890	195	9,730	169	4,060	...	...	...	...	541	18,680
Agency and Regional Management	...	...	...	...	...	...	1,837	$17,400	...	...	1,837	17,400
Subtotal	1,779	42,800	3,998	77,500	1,525	13,800	1,837	17,400	40	21,000	9,179	172,500
Buildings & Facilities	...	...	...	...	...	...	...	...	...	500	...	500
Scientific Activities Overseas	...	...	...	...	...	...	...	...	...	1,000	...	1,000
Construction Grants Contract Authority	...	...	...	...	...	...	...	...	...	...	...	...
Miscellaneous Trust Funds	...	...	...	...	...	...	...	...	...	...	...	...
Advances Reimbursements and Allocations	85	...	20	...	...	...	...	...	16	...	121	...
Subtotal	85	...	20	...	...	...	...	...	16	1,500	121	1,500
Total	1,864	42,800	4,018	77,500	1,525	13,800	1,837	17,400	56	22,500	9,300	174,000

Environmental Protection Agency

Total Funds Available, 1975

	1975			
	Budget Authority	Unobligated Balance Brought Forward	Unobligated Balance Carried Forward	Total Available
Research and Development	$169,229,500	$17,667,000	$20,809,000	$166,087,500
Air............................	55,958,800	7,310,300	7,017,100	56,252,000
Water Quality..................	46,373,200	3,793,700	2,833,100	47,333,800
Water Supply...................	4,762,000	53,900	76,900	4,739,000
Solid Wastes...................	9,196,500	2,685,800	6,282,300	5,600,000
Pesticides.....................	11,193,000	...	446,000	10,747,000
Radiation......................	2,637,700	...	...	2,637,700
Noise..........................	544,900	...	31,900	513,000
Interdisciplinary..............	18,767,500	2,949,600	3,221,100	18,496,000
Toxic Substances...............	1,208,600	...	600	1,208,000
Program Management and Support..	18,587,300	873,700	900,000	18,561,000
Abatement and Control	279,225,700	35,311,061	38,311,000	276,225,761
Air............................	87,317,300	12,783,500	12,600,800	87,500,000
Water Quality..................	111,190,800	16,006,761	17,079,800	110,117,761
Water Supply...................	3,036,800	157,700	686,500	2,508,000
Solid Wastes...................	10,332,000	3,055,000	2,687,000	10,700,000
Pesticides.....................	19,521,900	990,500	712,400	19,800,000
Radiation......................	4,569,900	468,400	138,300	4,900,000
Noise..........................	4,889,000	171,200	460,200	4,600,000
Toxic Substances...............	6,838,200	330,100	2,968,300	4,200,000
Program Management and Support..	31,529,800	1,347,900	977,700	31,900,000
Enforcement	51,670,300	587,172	...	52,257,472
Air............................	10,749,900	...	...	10,749,900

	1975			
	Budget Authority	Unobligated Balance Brought Forward	Unobligated Balance Carried Forward	Total Available
Water Quality..................	24,064,800	587,172	...	24,651,972
Pesticides.....................	3,408,500	...	...	3,408,500
Noise..........................	21,300	...	...	21,300
Program Management and Support..	13,425,800	...	...	13,425,800
Agency and Regional Management	60,469,500	...	...	60,469,500
Agency Management and Support...	49,262,700	...	...	49,262,700
Regional Management and Support.	11,206,800	...	...	11,206,800
Energy Research and Development	134,000,000	...	24,000,000	110,000,000
Buildings and Facilities	1,400,000	...	...	1,400,000
Scientific Activities Overseas	...	1,440,600	...	1,440,600
Construction Grants (Appropriation)	...	701,555,358	...	701,555,358
Operations, Research and Facilities	...	18,366,217	...	18,366,217
Subtotal..................	695,995,000	774,927,408	83,120,000	1,387,802,408
Contract Authority				
Construction Grants............	9,000,000,000 a/	7,358,288,069	12,858,288,069	3,500,000,000
Areawide Waste Treatment Management Grants..................	150,000,000	...	...	120,000,000 b/
Total..................	9,845,995,000	8,133,215,477	12,941,408,069	5,007,802,408

a/ Available from 1976 authority. Includes $1,333,770,000 allotted earlier by Court Orders but not made available for obligation until the Supreme Court decision of 2/18/75.

b/ $30 million administratively cancelled.

Environmental Protection Agency

Total Funds Available, 1976

	1976			
	Budget Authority	Unobligated Balance Brought Forward	Unobligated Balance Carried Forward	Total Available
Research and Development	$162,631,600	$20,809,000	$18,809,000	$164,631,600
Air	47,973,600	7,017,100	6,711,100	48,279,600
Water Quality	44,892,400	2,833,100	1,900,000	45,825,500
Water Supply	12,364,200	76,900	2,341,100	10,100,000
Solid Wastes	3,997,300	6,282,300	2,179,600	8,100,000
Pesticides	11,197,900	446,000	743,900	10,900,000
Radiation	1,640,000	...	...	1,640,000
Noise	45,000	31,900	...	76,900
Interdisciplinary	20,775,800	3,221,100	4,596,900	19,400,000
Toxic Substances	1,209,000	600	...	1,209,600
Program Management and Support	18,536,400	900,000	336,400	19,100,000
Abatement and Control	339,547,900	38,311,000	31,311,000	346,547,900
Air	77,235,100	12,600,800	8,100,000	81,735,900
Water Quality	144,521,900	17,079,800	14,521,000	147,080,700
Water Supply	19,860,900	686,500	3,100,000	17,447,400
Solid Wastes	11,622,700	2,687,000	900,000	13,409,700
Pesticides	29,552,100	712,400	1,800,000	28,464,500
Radiation	4,337,100	138,300	150,000	4,325,400
Noise	9,592,200	460,200	570,000	9,482,400
Toxic Substances	6,850,300	2,968,300	1,600,000	8,218,600
Program Management and Support	35,975,600	977,700	570,000	36,383,300
Enforcement	53,162,000	...	...	53,162,000
Air	12,020,000	...	...	12,020,000

	1976			
	Budget Authority	Unobligated Balance Brought Forward	Unobligated Balance Carried Forward	Total Available
Water Quality....................	21,293,500	...	...	21,293,500
Water Supply.....................	100,000	...	...	100,000
Pesticides.......................	3,582,900	...	...	3,582,900
Noise............................	521,700	...	...	521,700
Program Management and Support...	15,643,900	...	...	15,643,900
Agency and Regional Management	67,358,500	...	...	67,358,500
Agency Management and Support....	56,034,900	...	...	56,034,900
Regional Management and Support..	11,323,600	...	...	11,323,600
Energy, Research and Development	112,000,000	24,000,000	11,000,000	125,000,000
Buildings and Facilities	2,100,000	...	...	2,100,000
Scientific Activities Overseas	6,000,000	...	...	6,000,000
Operations, Research, and Facilities	...	...	...	...
Subtotal....................	742,800,000	83,120,000	61,120,000	764,800,000
Contract Authority:				
Construction Grants..............	...	12,858,288,069	7,258,288,069	5,600,000,000
Areawide Waste Treatment Management Grants..................	...	...	...	...
Total....................	742,800,000	12,941,408,069	7,319,408,069	6,364,800,000